SOUTHERN PLANTER
(1882)

VOL. 45
1884

MISSING: NO. 2-3, 6-7, 9, 11

THE

SOUTHERN PLANTER

DEVOTED TO

AGRICULTURE, HORTICULTURE, LIVE STOCK AND THE HOUSEHOLD.

Office, 26 Wilkerson's Hall, Ninth Street.

T. W. ORMOND, - - - - - - PROPRIETOR.
W. C. KNIGHT, - - - - - - EDITOR.
W. C. JACKSON, - - - - - - ADVERTISING AGENT.

45th Year. AUGUST, 1884. No. 8.

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—THE—

SOUTHERN PLANTER.

DEVOTED TO

Agriculture, Horticulture, Live Stock and the Household.

Agriculture is the nursing mother of the Arts.—XENOPHON.
Tillage and pasturage are the two breasts of the State.—SULLY.

T. W. ORMOND, - - - - - - - - PROPRIETOR.
W. C. KNIGHT, - - - - - - - - EDITOR.

45TH YEAR. RICHMOND, AUGUST, 1884. No. 8

PHOSPHATES AND SUPERPHOSPHATES.

Editor Southern Planter,—I invite the attention of your readers to the results of some experiments undertaken by Prof. J. M. Munro, of the English Agricultural College at Downton. This gentleman has the degree of Doctor of Science, and is a Fellow of the Chemical Society; he is by profession an analytical and consulting chemist, and is therefore a proper person to undertake a set of scientific experiments. Professor Munro says: "I have no doubt whatever of the efficacy of finely ground mineral phosphates (floats) on some soils, and I consider the experiments of Jaimison and others to have *proved conclusively* that in many instances the raw phosphate, if sufficiently fine, will produce results fully equal to or even better than those produced by superphosphates. At the same time I am not prepared to admit as much *for all soils* and under all circumstances." * * *

"There is no doubt that finely ground mineral phosphates have been unduly neglected, and that the increasing application of these 'floats' is well worthy of attention." "I was particularly desirous to test the comparative merits of floats and superphosphates on the soils of the College Farm, because these soils are of a light, sandy and calcareous nature, supposed to be particularly suitable for superphosphates."

Here follows the detailed account of the experiments, and then Professor Munro concludes:

"On this soil, therefore, which is one most favourable to superphosphate, an equal weight of floats produces nearly as good results, *even in the first year*, whilst there can be little doubt that the benefit of the 'floats' will be much more marked in subsequent years." * * *

"Some experiments which we made last year with different top-dressings are also instructive. The soil, an alluvial, sandy loam, was dunged with thirteen or fourteen tons of farm-yard manure per acre, and three cwt. of superphosphate per acre was drilled in with the seed. Yet even after this liberal treatment, a top-dressing of six cwt. per acre of floats produced still a fair increase of crop." "Both these experiments, which were made under circumstances favourable rather to the use of superphosphates than of floats, points decidedly to the desirability of more extensive trial and use of the latter cheaper material."

These, Mr. Editor, are the results and opinions of a thoroughly trained scientific man prejudiced rather against than in favor of the use of floats. But some man who has used floats on poorly prepared corn-land wheat and has not made what he thinks as good a crop as he ought to have made, flies into print and declares that floats are "worthless." I have before me now letters from a farmer who says he has used South Carolina rock both in the form of floats and dissolved, with potash, and found them worthless; that the South Carolina rock is entirely worthless in all forms, but that he has found a certain "brand" of wheat manure always produces splendid results. I happen to know what that "brand" is. It is simply kainit, dissolved South Carolina rock and certain ammoniates added. The article, therefore, which my friend denounces as worthless in one place, he lauds extravagantly in another, without at all knowing the absurdity, the ignorance and the folly of his peremptory denunciations of dissolved South Carolina rock as "worthless," and finally South Carolina rock as "worthless" in all forms and under all combinations and methods of use. So long as men no better furnished with knowledge than this gentleman, will insist upon supposing that they are born to teach their neighbors how to farm, so long will there be found persons to follow their advice.

The best part of my story is yet to be told, Mr. Editor. My friend turns out to be the local agent for the "brand" he recommends as superior to all others, and which he supposes to contain animal bone, and not a trace of "that worthless stuff, Carolina rock," because the analysis reported by the chemist says "equal to 'bone phosphate'" — per cent. It is thus that many farmers, successful by reason of industrious and frugal habits, and from possession of the mercantile faculty, are often self-deceived by their want of scientific knowledge, and are badly misled by their failure to comprehend chemical terms.

M. G. Ellzey, M. D.

EXPERIMENTS WITH FERTILIZERS.

Editor Southern Planter,—The following experiments were made by myself to determine the value of different commercial fertilizers on wheat. The land experimented on was an old pasture lot, "gray soil underlaid with stiff yellow clay," which was plowed in Spring of 1883, and planted to corn, making twelve bushels per acre of soft corn. It was then plowed across the corn rows with a two-horse plow in thirty-feet beds, two of which made one and one-fourth acres; put in good condition with a forty-tooth jointed harrow. Fertilizers and wheat sown broadcast by myself. Wheat sown 16th October, one and one-eighth bushels per acre of white golden chaff wheat. Land sufficiently rolling to carry off surface water at all times.

Each plot contained one and one-fourth acres, with no difference in quality that I could see. Wheat was cut with reaper, shocked and threshed separately, with machine measure, with no account of gleanings. The field sown with four quarts of timothy per acre in the Fall and same quantity of clover this Spring. Timothy heading out when wheat was cut in manured portion; in the rest very small.

Plot No. 1.—200 pounds bone meal, 200 pounds kainit—bought of Stearns & Halsey; cost $5.25. Product, 15 bushels wheat.

Plot No. 2.—200 pounds Anchor Brand wheat fertilizer, 200 pounds potash mixture and South Carolina bone—bought of Southern Fertilizing Company; cost $5.30. Product, 13¾ bushels wheat.

Plot No. 3.—Two bags (333 pounds) Orchilla Guano—bought of Chas. G. Snead; cost $5.00. Product, 9¾ bushels wheat.

Plot No. 4.—200 pounds Pacific guano—bought of A. R. Ellerson & Co.; cost $4.25. I added five bushels ashes worth 75 cents. Product, 14¾ bushels wheat.

Plot No. 5.—No fertilizer or manure. Product, 8¼ bushels wheat.

Plot No. 6.—Sixteen two-horse loads of stable manure, cost in Richmond $9.60. Product, 21½ bushels wheat.

This manure was applied as top-dressing last of November. I am reasonably sure of two crops of hay and a crop of corn where the manure was applied, but am now top-dressing the fertilized portions with twelve two-horse loads of manure per acre to insure a crop of hay.

Have used fertilizers some fifteen years, and came to the conclusion years ago that the nearest road to the poor-house for an ordinary farmer like myself was to depend upon commercial fertilizers to produce grain and grass crops. With wheat at a dollar, trouble of applying fertilizer

and cost of threshing, I fail to see any profit in any of the above experiments except the manure.

I have a field in corn that had seventy-five bushels per acre of gas lime put on the grass sod last Winter and plowed in this Spring, and I expect to sow it to wheat this Fall. Will not Col. Harrison, Commissioner of Agriculture, analyze this soil and recommend what fertilizer I shall use to insure a paying crop? I will agree to follow his directions and publish results. NORMAND SMITH.

Henrico Co., Va., July 1, 1884.

SOME NEW SUGGESTIONS ABOUT ENSILAGE.

Editor Southern Planter,—The question of ensilage is assuming prominence in all the Eastern States, and certainly presents such features as demand careful experimentation at the hands of all agriculturists. The successes are so numerous and failures so rare that it is difficult to avoid the conclusion that the silo has come to stay and will hereafter be regarded as one of the essentials of the farm.

I wish to submit a query or two for answer by those who have experimented in that direction.

Why may not cut straw be profitably mixed with the ensilage in the filling of the silo? Say a layer of an inch or two of short cut straw with eight or ten inches of green stuff. Would not the straw act as an absorbent of the juices and tend to prevent also excessive fermentation?

For dry cows, steers and other store stock of the farm, such a mixture would seem to be desirable, though not so for cows in milk, inasmuch as these should be fed stronger and better forage than straw in any of its forms.

Small silos, rather than large ones, are strongly recommended by ensilagists. Why not fill them with varied feed? One, for instance, for non-milkers, and another for the milkers? There may be practical difficulties involved not only in the filling of the silo but also in the preservation of the ensilage where straw may be one of the factors; yet I cannot perceive, in my inexperience, why fine cut straw should militate in any respect. R. S. LACY.

Washington, D. C.

DR. STURTEVANT told the western New York fruit-growers' meeting that he had received collections of apples from Halifax, Maine, Massachusetts, western New York and Michigan, and that in flavor they were found in the order named, and, while the quality diminished as they went west, the size increased.

PARIS GREEN FOR POTATO BUGS.

Editor Southern Planter,—Some weeks ago, at a social gathering of neighbors at my house, the potato pest (the Colorado beetle), then just making its appearance, was brought up in conversation, when a Wisconsin farmer, just settled here, maintained that Paris green was an effectual antidote. To this, Mr. Editor, your brother, Dr. Knight, objected; saying he had seen it tried by Geo. Watt, Jr., of Richmond, without success. Our new neighbor insisted that something must have been wrong, either in the article or its application, as he had used it himself and seen it used so often as to be convinced of its value. I told him I would be glad to try it myself, as I had succumbed to the bugs in my last year's crop of potatoes in fighting them by hand. To my surprise and great gratification he came over to my house in a few days, bringing a pound of the Paris green, getting a bucket of water and a swab, and showing a colored hand how to mix and apply the article, and we had satisfactory success. I myself have seen it applied twice since, with the same results, and now feel that I am not afraid of the Colorado beetle.

It is a poison, and must be handled carefully, and must not be put into a deep vessel where it sinks to the bottom out of the reach of the swab, and therefore is not applied to the potato tops in sufficient quantity. I hope others will try the Paris green and let us hear from them.

Nottoway Co., Va., 18 June, 1884. SHARPE CARTER.

[We regret that this communication was not received in time for our last issue, as the suggested remedy is now too late for the present season. As a confirmatory statement we append an article from a recent issue of the *Country Gentleman*.—ED. S. P.]

THE POTATO BEETLE IN NEW ENGLAND.

Eds. Country Gentleman,—Whatever else may fail, it is quite safe to count on an abundant crop of potato bugs, or Colorado beetles. They came out early this season, and are now found in unusually large numbers for this time of the year. Referring to my memorandum book, I find that in 1882 they were first seen on my farm on June 2d. In 1883 they were first seen on May 24th. This year I found quite a number creeping about on May 17th, and on June 1st I found they were depositing eggs on the leaves of my early potatoes. On June 7th I picked 263 beetles from 100 hills of early potatoes.

When they attack young potato plants so early, and in such numbers, I think hand-picking is the best way of managing them for the following few weeks. If left to themselves, they retard the growth of the young plants, and do them great damage, and if Paris green is used while the plants are so tender it, too, will injure them. But if the old beetles can be kept in check until the potatoes get a good start, at

about the time the young larvæ appear, Paris green can be used to good purpose, and with little or no injury to the crop. I do not like the plan of mixing the Paris green with flour, ashes or lime, and using it dry. My experience with it in that form has shown it to be more expensive, less effective, and requiring more labor in its application. Besides, I do not like to breathe the air when filled with particles of such dust.

A large brook passes through my farm, and with team and barrels I can soon have plenty of water close to my potato field. I then take a pound of Paris green and mix it with three pints of water. Of this mixture I put a large spoonful into a two-gallon watering-pot and fill it with water. I can pass across the piece at a brisk walk, sprinkling the tops, and doing good work. The advantage of wetting the Paris green in the quart and a half of water is two-fold: It saves frequent handling of the dry powder (which the slightest breeze will scatter through the air), and in this wet condition it will mingle with the water when put into the watering-pot so much more readily than will the dry powder, and two-thirds of the time required in stirring will be saved.

Farmers of this locality have not planted more than three-fifths as many potatoes as they did last year. I think there is a prospect of better prices. H. L. C.

Rochester, N. H., June 12.

STRAWBERRIES—VIEWS OF AN EXPERIENCED GROWER.

[For the Southern Planter.]

Crow Spring, Chesterfield Co., Va., May 24, 1884.

Col. Randolph Harrison, Commissioner of Agriculture:

Dear Sir,—I herewith present you with four baskets of strawberries, composed of the Early Richmond, Jucunda, Cumberland and Sharpless. The first named is an accidental seedling I found growing in an old bed composed of the Jucunda and Wilson, and I believe it to be a cross between the two, as it resembles both in fruit and plant. It ripens its fruit in three or four days after the Crystal City (the earliest berry known) and a week earlier than the Wilson. I have been watching it for five years, and it ripens its fruit early every time, and the fruit is as large or larger than the Wilson and very productive, being of a deep rich red color, firm as the Wilson and but slightly acid, and of the *very best quality*, not excepting the Sharpless. It ripens its fruit when berries are worth twenty and twenty-five cents per quart on the Richmond market, the first picking being on the 14th May this year; and it has the habit of ripening from four to twelve berries at a picking very early in the season, continues long in bearing and does not make too many runners, and succeeds on both clay and sandy soil. I think it will succeed

wherever the Wilson will, and think it will do best in hills, as it forms large stools. It is a perfect bloomer and earlier than the Crescent Seedling, which is an imperfect bloomer and, to my taste, is lacking in flavor and quality, but is very productive.

The Crystal City, while it is very early, is rather small and soft, but of excellent quality and not very productive.

The Jucunda is a fine, large, showy berry, of the best quality, rather later and larger than the Wilson, firm, and very productive and splendid color, but it is said not to succeed well on light sandy soil, but with me it succeeds on both clay and sandy soils, and does best in hills. I cannot see why this berry is not more generally cultivated, for it has but few superiors.

The Cumberland is a very large berry, of fine appearance, but rather soft, and I think it lacking in flavor and quality, but it is admired by many for its fine looks, regardless of the quantity of sugar it takes to sweeten it. A very intelligent citizen of Richmond told me the other day that they had got to growing strawberries so large that it took double the quantity of sugar to sweeten them, when the fact is many of the larger berries are lacking in flavor, and city people are beginning to find it out.

The Sharpless is another large berry that ripens late, of splendid quality, but does not succeed so well as many others, as it must have high culture on clay or clay loam to make it do its best. Will not do well on sandy soil.

The Manchester, a new berry, has not succeeded so well with me, fruited this year for the first time, and is not as good as the Wilson, though it is said to do well at the North.

The strawberry crop is assuming large proportions in some parts of the State, and it is strange that there are so many families in the country that are without the enjoyment of this delightful, healthful fruit to gladden the hearts of the "little ones at home."

Very truly yours, GEORGE B. ADKINS.

[Mr. Adkins favored us in season with a sample of his *Early Richmond*, and we saw nothing better during the year. The *Jucunda* is a larger berry, but no better flavored. —ED. S. P.]

THERE are few farmers that cannot make experiments of some kind during the coming season which will be of benefit to themselves and to their brethren. They may be upon a small scale, yet if faithfully carried on, and the results reported, the time expended in it will not be wasted.

POOR LAND AND GRASS.

[For the Southern Planter.]

Editor Southern Planter,—Poor land is not good for any crop. The bulk of the land in Eastern Virginia is too poor to pay for the cost of cultivation of the crops usually grown in that section. Often, apart from the cost of seeding or planting and cultivation, the crop produced is hardly worth gathering. Unless, then, such lands are to be abandoned, except for some scanty grazing, barely sufficient for any but scrub-stock, which they afford, we must seek for them some crop which they will best produce and which is least costly to raise. This little article is written to suggest that grass is that crop.

First, then, I maintain that grass is much less costly to raise than the staple crops known among us.

Second, that poor land will bring a better crop of grass than of corn, oats, wheat or tobacco.

The first proposition will no doubt be readily conceded, upon consideration of the fact that although a careful preparation of the ground and sowing of grass, including cost of seed, is doubtless as costly as is the seeding and cultivation of other field crops, yet the latter crops are annual and grass perennial. So that in the case of the other crops the whole cost of production must be taken from the single crop of a season or a year, while grass coming from year to year without further cost of seeding or cultivation, the original cost of production must be deducted, not from a single crop, but from a succession of crops, renewed from season to season by nature and without additional cost.

If we could sow wheat or corn or oats and from the original preparation and cultivation realize a succession of crops for some years, our profits would be wonderfully increased. This we can do with grass. And I therefore say that the cost of its cultivation is very much less than that of our other crops.

Now, my second proposition, viz: that poor land will produce a better crop of grass than of wheat, corn, oats, etc. The reason of this is, that poor land, in order to bring any crop at all, is very dependent on seasonable weather. Wheat, corn, oats, and our other ordinary crops, are in the ground but a fraction of a year. These crops have their critical seasons, which are short, and if during these seasons rains fail or other unfavorable weather supervenes, on poor land utter failure results.

Grass occupies the ground the whole year and for year after year. Its seasons of growth and development cover the larger part of the year.

It can therefore survive the crises that terminate in ruin to the crops; and after one disastrous season it can avail itself of the next recurrence of weather favorable for it. In the region of country from which I now write, a Spring drouth and other unfavorable weather has so prevented the growth of the oat crop that perhaps half the surface sown in Spring cannot be harvested at all. Suppose these oats could patiently acquiesce in the situation, and wait for better seasons in the latter Summer or coming Fall, the return they would then make the farmer for his labor and money expended on them, though later than he had hoped for, would nevertheless be very welcome. This grass can do and does do. It holds on to its position on the land, and when from want of rain or other cause, it is unable to get nutriment enough out of a poor soil to present any respectable growth, it will yet, when seasonable weather returns, tug away with roots already in place, and wring from the soil what is available in it and cover it with as satisfactory a growth as the quality of the land will justify. Therefore I say poor land will produce better crops of grass than of the other things we are in the habit of cultivating.

In this connection it should also be remembered that the efficiency, simplicity and cheapness of the machinery by which this crop can be saved, make its harvest much less laborious and costly than that of other crops. And finally, the great bulk of the grass crop is after all harvested by the farmer's live stock, who are converted into farm laborers without wages, and who even return to their employer, in the form of beef, mutton, wool, etc., their rations of food.

Now, in this connection, one other thought. Grass responds surprisingly to top-dressings of manure or litter of almost any kind; and perhaps manure spread on growing grass is subject to less waste, goes farther and accomplishes more than it does by any other mode of application. Thus applied it can't leach into the subsoil without passing roots spread through the top soil ready and eager to arrest it in its passage and appropriate it. Thus applied it also acts with great benefit as a shade. So it results that by having growing grass always ready to receive whatever the farmer can gather up in the way of manure, and to utilize it more fully perhaps than any other crop will do, the yearly supply of manure is in effect materially increased. It need never waste or leach away from barn-yards or other places of accumulation. Its escape into the subsoil is avoided and its benefit as a shade is superadded.

EXPERIMENTER.

[This is a timely hint to farmers who have poor land which they wish to get in grass. Try the suggestions of our correspondent in a small way, if you have not the means or

nerve for a larger operation. It will pay to go faster than the slow process recommended. Fallow a few acres early in August by way of experiment; and before fallowing see that the land is well cleared of all bushes, etc., and that the wet spots are drained. As soon as fallowed sow broadcast 200 pounds of bone dust or South Carolina floats to the acre. Let it so stand until the time of seeding comes—say any time in the month of September; then apply 200 pounds more of the same material and harrow it in; sow three pecks to a bushel of rye per acre and harrow that well in; and then sow two bushels of orchard grass seed and one gallon of clover seed to the acre. Lightly harrow or *bush* the land after the grass seeds are sown. During the Winter the rye may be grazed by sheep or young cattle when the land is not wet. Early in the Spring apply fifty pounds kainit and fifty pounds of nitrate of soda to the acre, mixed with a bushel of dry earth or ashes to ensure even distribution, and when the rye has been harvested apply one or two bushels of plaster to the acre. With such treatment we are sure that poor land may be made to produce a good crop of grass the second year after seeding; and if hay is not the object it will furnish good grazing for a number of years, but care should be taken that the grazing is not too close.—Ed. S. P.]

HOW TO FORETELL WEATHER.

The Farmer's Club of the American Institute has issued the following rules for foretelling the weather. If farmers and others whose business is out of doors and depend upon the weather, will study them closely, they will be able to guess the weather more accurately than Wiggins or Vennor:

1. When the temperature falls suddenly there is a storm forming south of you.

2. When the temperature rises suddenly there is a storm forming north of you.

3. The wind always blows from a region of fair weather toward a region where a storm is forming.

4. Cirrus clouds always move from a region where a storm is in progress toward a region of fair weather.

5. Cumulous clouds always move from a region where a storm is forming.

6. Where cirrus clouds are moving rapidly from the north or northeast there will be rain inside of twenty-four hours, no matter how cold it is.

7. When cirrus clouds are moving rapidly from the south or southeast there will be a cold hail-storm on the morrow, if it be in the Summer, and if it be in Winter, there will be a snow-storm.

8. The wind always blows in a circle around a storm, and when it blows from the north the heaviest rain is east of you; if it blows from the south the heaviest rain is west of you; if it blows from the east the heaviest rain is south.

9. The wind never blows unless rain or snow is falling within 1,000 miles of you.

10. Whenever heavy, white frost occurs, a storm is forming within 1,000 miles north or northwest of you.

[For the Southern Planter.]

LETTER FROM THE VALLEY.

Mr. Editor,—Strange how Providence honors the brave! It is not every day that a man can turn out at dawn and get in a load of clover hay before breakfast. Yesterday, however, it was done, and lo! on returning from W. by the noon train, and the long coveted opportunity is given of thanking Dr. Talmage *in propria persona*, for teaching how "*he looked out of his window when dawn was just dappling into day and saw the night shadows striking their tents.*"

June is now over, and before we lose the echoes of the sentiment and action of the late Louisville S. S. Convention, as given in the *Courier-Journal*, permit me to remind the readers of the *Planter* of their interest in the Convention and its provision for the next seven years of fourteen men to aid us in the Scripture investigation, many of our families will find time on the Lord's Day to undertake. Our Virginia delegation of fifteen was composed of men young and vigorous, but the Dr. John A. Broadus, who welcomed us to Louisville, was a guarantee for the entire State of the dignity of the work projected.

A ride through the blue grass of Kentucky was one of the pleasant things for the Virginia delegates, which they would fain have shared with their agricultural friends at home. Then the observation car on the C. & O. in the return, as we pass from the canyon of the Kanawha on to that of the Greenbrier, is of itself sufficient to justify some travel in this direction upon the part of our young agriculturists.

Now, however, that the self-binder is in the field, our young gentlemen must needs postpone for the present the magnificent panorama awaiting their leisure, whether it be found in June or October. Such as buckle to the work of harvest now will sooner or later enjoy this ride yet, if we who have the determination of future Conventions can secure their attention and their confidence.

When I wrote you in February, Mr. Furman, of the Intensive System of Farming, had fallen. Since I last wrote you, Dr. Pollard has been removed by death. But if, as I suspect, the Furman formula involves in its compounding the rare attainments of a Prof. Le Conte in chemistry, and we still have a Dabney at Raleigh for one State, to say nothing of our own Virginia graduates in this school, we ought not fail to advance if we can secure for the agriculturist the benefit of their scientific attainments. Hoping that Dr. R. L. Dabney, who is now, I am told, upon his farm in Amherst for a brief season, will be disposed to plead at Raleigh for a perfect formula of plant food for wheat, I will,

I trust, be permitted to write you again in the line of the more enlightened policy, involving the use of six days of labor and one of exalted rest. W. A. CRAWFORD.

At the Curve P. O., Kernstown, Va., July 2, 1884.

NOTES FROM LUNENBURG COUNTY.

Editor Southern Planter,—I promised and did intend writing you something for the *Planter*, but now the time has almost elapsed to get it in for your August number, so I have concluded to send you only a hastily written note or two.

First, I made a trip a few weeks since to Columbian Grove, the residence of William M. Bagley, Esq. While there I wished you could see his premises, his grass and his cattle, his fences and his crops, and more especially his large and well cultivated garden—his strawberries, his raspberries, his abundance of every desirable vegetable, and lastly, but not *leastly*, his vineyard—the vines, trained to one wire six feet from the ground, loaded with fruit, presenting to the eye when viewed from a little distance as smooth and unrippled a surface as that of a lake at rest. His fine colts and his wheat are specially deserving of mention. Of the latter, I am informed, he frequently gathers forty bushels to the acre; and his home is situated on what is believed to be one of the poorest ridges in the county.

My next visit was to the home of Robert M. Williams, Esq., our late Superintendent of Public Schools, and who was ostracized because he had not dirtied his fingers by dabbling in the filth of politics. Mrs. Williams invited me to look at her garden, of which she was the sole guardian and supervisor. I am sure I never saw—I was going to say a better, but I never saw so good a vegetable garden before. Every vegetable you could think of was in abundance—in profusion—enough to supply an entire neighborhood. It was large and thoroughly cultivated, and the thought occurred to me that if your Commissioner of Immigration would send up an artist and get a good picture of the two gardens—Mr. Bagley's and Mrs. Williams', for general distribution, it would give an impetus to the work they are laboring to accomplish. If I *am* a book farmer, I know a good thing when I see it, and I know you will not consider me extravagant when I say that our Virginia lands, with judicious management, with proper fertilization and cultivation, are, may I not say, as good as any to be found anywhere? Grass and ensilage must be the foundation on which we must build.

They enable us to feed stock, which in its turn will feed the grass, each paying back to the other, with double compound interest, and causing each to multiply in a geometrical ratio.

And now, a word as to my experiment in grape culture. In the early Spring I pull off the young canes to one or two, and that is all the Summer pruning I do; and I have always new wood. A good many of my yearling canes grew last year from ten to twelve feet long, without a limb or branch, and this year they put out from every joint a vigorous fruit sprout, loaded with large bunches, much larger than those from the old wood. I know of some vineyards of about ten years' standing that are now almost worthless on account of close pruning.

The unusual rain-fall, I fear, will be seriously detrimental to the grape crop, but the present promise is very cheering.

We want a wine company and a railroad. The latter *we mean to have*, and that at no very distant day. Please don't forget it.

Respectfully yours, R. J. H. Hatchett.

HEDGE'S PROLIFIC WHEAT.

Editor Southern Planter,—The wheat in Augusta, around Waynesboro, and the village of New Hope is extraordinarily good, but immediately adjoining the first-named village are several lots, aggregating nine acres of wheat. A good farmer, who was with me and called my attention to it, said it was the best wheat he had seen. The owner is Mr. James A. Austin, and the wheat is smooth, with a fair, plump grain, weighing over sixty pounds. He procured it from Mr. John Ott, a Rockingham farmer, who removed into this county a few years ago. My object now is simply to call your attention to it as a new wheat; that it is destined to be an acquisition. Mr. Ott, on thin land, made twenty-five to one sowed. Mr. Austin informs me he sent sixty bushels last Fall to a friend in Wythe. So he may hear a good account of that. I will endeavor to get a history of its origin, name, &c., and, when threshed, give you the particulars. It is thicker on the ground, stiff in straw, and whilst the excessive rains have affected other wheats and caused all to fall, this and the Fultz stand up well.

Occasional.

The average annual consumption of wheat for bread in the United States is about three and three-fourths bushels for each individual of our population.

WORN-OUT FARMS.

Why do we hear so much about worn-out farms in the South, and not in the North? Is it climate, soil or shiftlessness?

E. H. B.

Reply: A third of a century ago, the method of farming in Ohio and Indiana was to clear off the forest, cultivate the land in corn, oats and wheat as long as the four or five inches turned by the plow would yield paying crops, then abandon it to the weeds and such volunteer grasses as might be able to establish themselves, calling it "worn-out," and clearing new fields for future cropping.

At that time tile drainage was practically unknown, and clover and grasses were seldom sown. Red-top and sedges were the natural grasses of the country, and Kentucky blue-grass, which was occasionally found in small patches on the drier lands, was looked upon with suspicion. Large tracts of land were in forest, and in these and on the public roads were pastured the herds of cattle and sheep, which were almost altogether of the rough "native" stock.

Under this system of management, and grown, as they were, largely on virgin soils, the average yield of wheat in the state of Ohio during the decade 1850–60, was 12.3 bushels per acre, and of corn 33.43 bushels.

The next decade was the war period; a time not calculated to stimulate permanent improvements of any sort. Some further clearing was done and a limited amount of surface ditching, but no tile draining of any consequence until the latter part of the period. During this decade the yield of wheat was 10.8 bushels, and of corn 31.38 bushels.

The next decade was one of peace and general prosperity. It opened, it is true, with a crash in financial circles, but there was nothing to seriously disturb the general feeling of security in farm investments. Tile drains were laid throughout the state to the aggregate length of thousands of miles; vast improvements were made in farm machinery, both in tillage and harvesting implements; the plow was lowered two or three inches, being now drawn quite generally by teams of three heavy Norman or Clydesdale horses, instead of the pair of "plugs" or light oxen which made the plow team of earlier days; the barn-yard manure, which was formerly too often regarded as an incumbrance, was now carefully saved and applied, and its volume augmented by enactment of laws to prevent stock running in the highways. The quality of stock of all kinds was improved by careful breeding, to a greater extent than in any similar period before. Under this management, the "worn-out" fields of thirty years ago have disappeared, and the portions of the state's geography they once occupied are yearly covered with abundant harvests.

During this decade the yield of wheat increased to an average of 13.23 bushels, and that of corn to 35.52 bushels, these averages being for the whole decade in each instance, as shown by the annual reports of

the Ohio State Board of Agriculture, and not for the census years alone.

Our correspondent has, no doubt, read between the lines the answer we would give to his query. Deeper culture, better drainage, more careful management of manures; these are some of the factors to which Ohio agriculture owes its progress during the past years. There is still another factor, however, which must be regarded as of great importance; and that is the culture of live stock, and especially of sheep. The experience of centuries has shown that the soil will not continue to yield abundant harvest unless some of the materials carried away in its crops be returned to it in the form of manure, or unless it be recuperated by allowing it to lie in grass. But the culture of grass involves the keeping of animals, and these, for the full realization of their value, necessitate the growing of various food crops, thus causing that diversity of production which is found in every country where the art of agriculture has attained its greatest perfection. In another article we shall give a comparative statement of the livestock industries of several of the states.—*Farm and Fireside.*

„THE EARLY BIRD," ETC.

The London *Agricultural Gazette* says, that he who intends to succeed in agriculture must be an early man; early in rising, early in getting in his crops, early in reaping them, early in meeting his men, early at fairs, early in markets, early at home and early to bed. "The youth that cannot rise until he is 'called,' who will not get up when he is called, who comes down to breakfast in embroided slippers, and cannot move out of doors until he has had his pipe, may be a good fellow, a gentleman and many other good things, but he is not going to succeed as a farmer, or in any other rural occupation. He has mistaken his calling, and is himself a mistake." There is much in that good old Saxon word "early," continues the *Gazette.* "It is the early sun that ripens the corn; the early bird that catches the worm; the early cabbage that catches the price; the early lamb that makes the money; the early chicken that pays the hen-wife; the early gooseberry that commands the market; the early swarm that makes the honey; the early sown wheat that fills the bushel; the early sown barley that pleases the malster; the early sack of wheat that attracts the miller; the early peas that pay the rent; the early potatoes that fetch the money; the early shepherd that fattens the sheep; the early carter that pleases his master; the early farmer who grows rich; the early housewife that keeps her maids; and the early maid that keeps her place. Earliness is the true road to success and the fact that so few can succeed in the race of life, is because so few can shake off dull sloth and rise early. There are some vocations in life in which early rising is not necessary but they are chiefly those to which another wise saying applies, "that you cannot burn the candle at both ends."

PRODUCTION OF NEW FRUITS.

[Extract from President Wilder's address before the American Pomological Society]

It is now more than thirty years since I first called the attention of this Society to the great importance of producing fruit from seed, in order to originate and obtain such varieties as might be adapted to the varied climate and sections of our ever-increasing and immense territory. And now, again, in fulfillment of my promise never to cease doing so, I beg to ratify and enforce what I have said in my former addresses.

It has long been known that varieties raised on our own soils and in our own localities are generally better suited to our various regions than those from foreign lands, and although we have some varieties from abroad of great excellence and wide adaptation, there are, comparatively, only a few out of the thousands of foreign kinds which we have proved in the last fifty years, that now remain in general cultivation. This fact is now generally acknowledged, and hence thousands of our pomologists are engaged in this most interesting, beautiful, and praiseworthy employment of raising American kinds. Formerly the accessions to our catalogue were from the Old World; now they are mostly of American origin, and so it will continue to be in future time. These are benefactions not only to our country, but the world. He that originates a new and valuable fruit, suited to general cultivation, is as much a benefactor of mankind as he who discovers a new principle in science which increases the comfort and happiness of our race.

Natural fertilization, as I have told you before, unaided by the hand of man, is as old as creation, but the knowledge of manual fertilization, the ability of man to assist nature in the process of improvement, seems to have been mostly withheld from us until the present age. Wonderful is this fact, but it is not more so than the unlimited extent to which it may be carried by the genius and sagacity of him who would cooperate with nature in his enchanting labor.

Strange, indeed, that this art should have been held in suspense for so many ages, not until our own time to be brought into practical use. But, thanks to the Disposer of all temporal concerns, it has now come as the harbinger of a progress which is to revolutionize and improve the fruits of the earth while time shall last. Thanks, too, to Knight, Herbert, Lindley, Darwin, Gray, and other teachers of latter time, for the lessons of wisdom, which have encouraged us to prosecute this most noble work.

The process of fecundation was known far back in the centuries of the past, but not for the production of new and improved varieties of plants. From the days of Pliny to the present time, the custom of suspending the blossoms of the date palm over the trusses of the fruit-bearing trees was known to be necessary for the production of fruit. So Tournefort and Linnæus understood the sexual order of plants; but we have no facts to show, so far as I know, that either of these writers had a knowledge that the crossing of different species and varieties

would produce from the seed a new variety which would possess in a greater or less degree the characteristics of the parent plants, and it is doubtful whether Duhamel, Van Mons, or Noisette was acquainted with this wonderful art for the indefinite improvement of our fruits.

This is the art that doth help nature, and great as has been the progress in our time, it is but as the dawn of that day when every section of our varied climes shall be furnished with products of the earth as well adapted to each as the people who inhabit them. How grand the acquisitions of this art in our own day! It is only about fifty years since Mr. Hovey, myself or other cultivators of our country, attempted the hybridization of fruits or flowers. Now the knowledge of this art is as well understood as the cultivation of the soil. Would that Prince, Downing, Brinckle, and those other pioneers who have gone before us, could now witness the amazing advances which have resulted from their labors in this cause. O that I could live to participate a little longer in the glorious harvest which is to be gathered from the influence of this art in improving the fruits of our land. These are benefactions which you will leave for the generations that are to follow you—memorials of your love of nature, of home and kindred, which shall live in the hearts of grateful millions, long after you shall have been sleeping in the dust.

Thus have I spoken for a long course of years of the importance of this branch of our duty. Thus would I preach while life shall last. "*Plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties, and as a shorter process, insuring more certain and happy results, cross and hybridize our finest kinds for still greater excellence.*" And should my muse be able to reach you from the spirit land, she would, as with telephonic voice, still chant in your ears the same old song,—

Plant the best seeds of every good fruit,
Good fruits to raise, some lands to suit;
Fruits which shall live, their bounties to shed,
On millions of souls, when you shall be dead.
These are creations that do the world good,
Treasures and pleasures, with health in your food,
Pleasures which leave in the mem'ry no sting,
No grief on the soul, no stain on Time's wing.

TRIAL OF DITCHING MACHINES.

The trial of ditching machines which was announced to be held in Columbus, Ohio, came off on the 1st, 2nd, and 3rd May on the new State Fair grounds in that city. This public trial was held under the auspices of the Ohio State Board of Agriculture, which offered prizes for the most practical ditcher. The following machines entered for competition, viz., Plumb's steam ditcher, of Illinois; the Mettler tile-laying machine, of Ohio; the elevator ditching machine, of Toronto, Canada; the Nogar machine, of Michigan; the Millner ditcher, of Ohio and the Chamberlain tile-laying machine of Iowa. After a thorough test the judges awarded the first prize to the elevator ditching machine, manufactured by Wm. Rennie, of Toronto, Canada, and divided the

second prize between the Plumb steam ditcher and the Nogar machine.

The elevator ditching machine undoubtedly deserved the first prize which it received, and was decidedly the most popular machine with the farmers, the exhibitor taking fifteen orders on the ground for delivery this season. The machine is made entirely of steel, except the truck wheels, therefore combining strength, lightness, and durability.

The cutting apparatus is a large wheel with a system of elevator buckets which fill with dirt and deposit into a spout, which leaves it in convenient form and distance to be filled in again. It is a light draught machine and weighs only 1,400 lbs. One man can easily raise it entirely out of the ground, when it can be transported as easily as a wagon.

It can be drawn forward and back in the same track, cutting any depth desired by the operator, up to three inches, according to the nature of the soil.

The number present to witness the trial was not as large as expected, owing to the busy season of the year among farmers. The crowd varied from 100 to 200, some coming and going all the time, and in the aggregate, during the three days, perhaps a thousand different persons were on the grounds. The entire grounds had been surveyed and levelled, under supervision of the secretary, and stakes driven at intervals along the line of the ditches, marked with figures showing the elevation above the lowest point, and the depth of the ditch at the stake. The ditches extended across the entire grounds, 110 rods, in a straight line, and each machine was required to complete one ditch at least.—*Toronto* (Canada) *Evening Mail.*

RAISING UPLAND RICE.

John F. West, of Fayette, Miss., writes to a Southern journal: In the spring of 1882 I received from Pro. Steele, of Mobile, about two ounces of upland rice to experiment with in this latitude. This variety was called the "Yengen" rice, from the state of Yengen, Chinese Empire, it having been brought from that country by Bishop Marvin, while on his travels in the "East, by way of the West." After giving it a trial, Prof. Steele noticed that it grew splendidly on the uplands, and and that it displayed several qualities of decided value. It was earlier in ripening than the Honduras or any of our varieties of upland rice. The grain was much whiter, and hulled more easily than any other variety he had ever seen. It stood drought better, with no blasting worthy of mention, and the yield was immense. I selected a piece of high ridge clay land, prepared as for corn and well pulverized. I was careful to drop from three to four grains in a hill, about ten or twelve inches apart in the drill, to make my limited supply of seed go as far as possible. Cultivated as corn, except that I used my cultivator more often to keep down weeds and vines, and in the latter part of summer harvested considerably more than a bushel of nice, clean rough rice to each ounce of seed planted. On land capable of producing good corn it will give a yield of from sixty to eighty bushels to the acre. I am surprised that upland rice is not more generally cultivated, as it cer-

tainly can be made a profitable crop even if there are no rice mills in the immediate vicinity. It is easily handled and can be shipped to market in the rough. It is excellent stock feed and a valuable auxiliary to the corn crop. The straw being very soft and spongy, is highly relished by stock. Besides, it is useful in many ways on the farm, making excellent horse-collars, mattresses, &c. I think it will grow and can be made profitable in any of the Southern or Middle States; in fact anywhere that there is a season of five months without frost. A spring frost does not injure it in the least, as the young plants may be nipped off by the frost and then spring up from the roots and do well, and probably better than if they had never been bitten.

ADVANTAGES OF THE JERSEY.

Let the Jerseys increase, because :—

1. Jerseys make more butter annually compared with the food they eat than any other breed.

2. Jerseys make better butter than any other breed—better grain and better flavor.

3. Jersey milk is the most profitable, because it contains more butter per quart than that of any other breed; its cream rises quicker and its butter comes quicker.

4. Jersey butter brings from two to ten cents a pound more than any other, as a rule, throughout the United States; hence on ninety farms out of 100, where butter is a speciality, the introduction of Jersey blood will change butter making from a dead loss to a net profit.

5. Butter farming is more profitable and healthful and refined than truck-farming, beef-farming, poultry or pig-raising.

6. For every cent lost on account of the Jersey's smaller carcass, there are two cents gained on account of her better butter and larger annual yield.

We want Holsteins and Ayrshires for the general milk and cheese supply; we want Shorthorns and Herefords for their beef; but the country wants the Jersey for her butter—so let us have an end to the opposition which this breed has met with for forty years. He who specializes wins. The "general-purpose cow" is an impossible animal.

Let each farmer decide whether all circumstances point to a beef, a milk or a butter breed, and choose his stock accordingly.—*Richard Goodman, in Rural New Yorker.*

THERE are many farmers who have extra good butter cows and do not know it. They have poor pastures in summer and no shelter and indifferent feed in winter. In the house they have no convenience for making butter, the milk is set where there are no arrangements for keeping it cool in the summer, and in the living room, exposed to the odors of the kitchen, in winter; and neither the quantity nor quiality nor any index of what a cow can do is kept.

WHEAT SOWING.

Intelligent farmers who make experiments—and every farmer may and ought to be an experimenter on a small scale—have come to the conclusion that in nine cases out of ten too much wheat is sown to the acre in the West.

The result is not only that the surplus is wasted—that is a small matter—but that the whole field is crowded, the crop stunted and the yield smaller than it would be if the plants had a fair chance. One grain of wheat planted in good soil with a sufficient margin for the roots to extend in will throw up as many as sixteen stems each with an ear containing fifty grains. But when the grains are sown so thick on the ground that an insufficient margin is left for each, a struggle for existence between the plants takes place, which consumes their vigor and the stems on each to one, two or three, which produce small heads with limits frequently imperfectly developed grains. Mr. C. E. HEWES of Fort Plain, N. Y., relates how, having what he thought was an insufficient supply of seed wheat of a certain kind one year, he was forced to sow a stinted amount of only five pecks to the acre instead of eight, which was the rule in his neighborhood. He feared the yield would be short, and was surprised and delighted when at harvest it turned out 49½ bushels to the acre. He profited by the lesson, and has limited his sowing to five pecks to the acre ever since, and rarely falls below 46 bushels per acre. But itis contended that even five pecks to the acre is too thick sowing; that four pecks is better, and that there are good reasons for believing a half bushel per acre is about the true quantity.

St. Louis Republican, *October* 11, 1883.

TALKS ABOUT FLOWERS.

To the novice, it may seem a little premature to begin in early summer time to make preparation for winter. But, if you want some Geraniums and Fuchsias that you can depend upon to produce a good supply of flowers at mid-winter, June and July is none too early to put down slips. I am aware, however, as I make the statement, that other pens will tell you September is the best time to start slips for winter-blooming. But that is not my experience, and it is mine, not theirs, I am giving.

If slips are not put down until September, unless your facilities for forwarding them are better than is usually found in dwelling-houses, they will not bloom before March; and the same may be said of the old roots that have done duty in the border all summer, and are cut back, and repotted in autumn, and set at the window to blossom in winter. With perhaps a few exceptional cases, such plants will not get ready to flower again before spring. But if the slips are rooted as early as June, or July, we have ample time to train them into strong-growing, bushy, compact plants, that will give us delight by blooming at midwinter

when everything outside wears a dismal aspect and flowers are indeed a luxury.

I have had such good success with early-rooted slips I want to tell you just how I manage them: My Geraniums are bedded out in summer, and when I take off slips, they are planted beneath the foliage of the parent bush making the earth firm about the part inserted in the soil, and then, I *let them alone.* The slips are watered only when the old plants need it; and in this way I dare to warrant you that I can root twelve from every dozen, if the cuttings are sufficiently hardened. As soon as they are strongly rooted, I pot those designed for winter flowering, but keep them out-doors until we begin to have frosty nights in autumn. I pot them in fresh soil in October, and up to this time pinch out all buds as fast as they appear. After this pottting, they are set at the window, where they have never failed to give me a succession of flowers all winter.

Does it not look reasonable to you that these healthy, vigorous plants, with all their vital functions in good working order, must necessarily give us better satisfaction than weaker growing slips, that lack the strength to give a succession of flowers, should they show a disposition to do so, or old plants that have bloomed continuously for nine months out of the year? But, as all Geraniums are not alike floriferous with precisely the same culture, it will be well to consider this point when potting our slips, and choose only those recommend for winter blooming, or that we have found by experience best adapted to that purpose. As Geraniums are one of my specialties, I will name a few varieties that I have found particularly fine for winter window-culture. *White Vesuvius* and *I've Got It*, are single varieties; both are good, but the latter is perfection. I can see no chance for improvement. *New Life*, *Jean Sisley*, and *William Cullen Bryant* are single scarlet. *Christine Neilson*, *Master Christine*, single pink; *Mrs. Moore*, white, with a bright-salmon ring around a small white eye. *Orange Boven*, salmon and white, single.

The following are doubles and semi-doubles: *Madam Thibaut*, *Mrs. Charles Pease* are beautiful shades of pink; the former is washed with violet carmine. *Jewell* is a dark rich, scarlet; the *Gem* is violet crimson, reverse of petals, white; is a beautiful variety. *L'Avenir* and *Bishop Wood* are dark-colored, very fine varieties. *Lamoines Cannell* is a rich amaranthine red, the under petals strongly marked with purple; the flowers have the appearance of rich velvet; it is a charming variety. For double salmon, I will mention *Asa Gray* and *Victor Hugo;* for double white, *Candidissima.* This is the best variety for all purposes I have as yet found among the double whites. There are two more single varieties that should be added to this list, *Mrs. Ind* bright pink, and a very free bloomer; leaf and flower-stalk, white; *Mrs. Windsor*, a very distinct variety, with enormous trusses of blush white, with a vermilion-scarlet eye covering almost one-half the petals; florets of good substance, a fine plant every way.

My Fuchsias are also planted in half-shady places, and new plants started for winter flowering; for the old roots get so large I cannot ac-

commodate them at the windows, so they are taken up and stored in the cellar until another spring. The slips root readily in moist sand in a sunny window; the winter bloomers are potted as soon as strong enough, and set out where the foliage of other plants will shield them from the hot sun and strong winds until they get hardened a little.

If they do not show a disposition to branch when six or eight inches high, I pinch of the top; this will force them to put out side-shoots, which in turn are pinched off until we have well-branched specimens; but do not allow them to bloom, for this will retard their growth. I take off all buds until after their potting in fresh soil in October, and give them a generous supply of earth, a little more than moderately rich; for the Fuchsia is a gross feeder, and when growing rapidly, will soon exhaust the soil, should we give them no more than we do our Geraniums. But Fuchsias, like Geraniums, are not all adapted for winter-blooming; the following varieties I have found best for the purpose:

Carl Halt, white and red-striped. *Mrs. Marshall*, tube and sepals pure white, corolla crimson. *Lustre*, tube and sepals waxy white, corolla vivid crimson, tinted with pale orange. *Lord Byron*, tube and sepals crimson, large, open, bell-shaped, almost black corolla. *Earl of Beaconsfield*, tube and sepals light rosy-carmine; corolla, deep carmine.

These are all fine varieties and plants of good habits; or perhaps I should except *Carl Halt;* this is inclined to grow awkward, unless pruned early, but the flowers are beautiful—not two alike.

There are other plants besides Geraniums and Fuchsias, that may, with equal advantage be especially trained for winter flowering. And I like to have a goodly number of fresh recruits to begin winter with, and let the old veterans rest after the summer campaign. If you want your Carnations to bloom next winter, cut back all the flower stalks that push up to within six inches of the ground until the first of September. This process is of the highest importance; it causes the plant to grow more bushy, and stronger; and it comes to the window-garden in a healthy condition, capable of flowering all winter without exhaustion.

There is quite a long list of both old and new varieties recommended for winter blooming, but I will mention those I have tried with success. *Hinzey's white*, a continous bloomer; flowers large and very fragrant. *Grace Wilder*, delicate pink; flowers large, finely fringed, clover scented. *La Purite*, carmine-striped, blush. *Crimson King*, color dark-crimson scarlet; very double and sweet. *Lord Clyde*, grondwork white, striped with carmine, and blotched with maroon; beautiful and sweet. *President James A. Garfield*, color a rich English vermilion; flowers large, perfect in form and highly fragrant; a fine variety. *Scarlet King*, rich crimson-scarlet; very large and double. *Peter Henderson*, large, pure white; petals crimped. *Eureka*, creamy-white, edged and striped with peachblow; sweet and very beautiful.—Mrs. G. W. Flanders, *in Ladies' Floral Cabinet.*

"THE TARIFF ON IMPORTS AND ITS EFFECT ON AGRICULTURE."

[For the Southern Planter.]

Editor of the Southern Planter,—You inserted an article in your July number under the above heading, signed D. B. Harris. In it he advocated free trade strongly, and asserts that "morally and naturally a protective tariff is a theft and a robbery both." Will you allow me to make a few remarks (without any reference to politics), why I think Virginia and the South would be seriously injured by free trade?

1st. Virginia and the South prior to the war was an agricultural district. After the war it was prostrate through loss of money, personal property, and depreciation of real estate, consequently was only able slowly to get in form to manufacture; hence the bulk of our existing manufactures are only five or ten years old, and others not started yet. If, then, free trade was adopted, a large number would have to close and a multitude never open, as they could not compete yet with Europe in price, as the manufacturers there have abundance of cheap capital, cheap labor, the best machinery, and an immense trade all over the world, whereas our manufacturers have a limited amount of dearer money, dearer labor, and a small trade yet.

2nd. The customs and circumstances of our mechanics and employees will not admit of their working for the same amount as their European brethren, as they have much heavier expenses and costlier tastes, and cannot afford to work for the same wages.

3rd. If free trade was adopted and it closed up our manufactures, it would injure the agriculturist to a considerable extent, because the manufacturers and employees are large consumers of vegetables, meat, fruit, poultry, etc., which culture the South is developing to a considerable extent, and making money thereby. If these industries were stopped, those employed in raising them, and the unemployed operatives would have to become raisers principally of wheat, which extra quantity, with smaller home demand, would make us still more dependent upon Europe to take our enlarged crop on their own terms.

As the profits of a well-managed farm are not dependent upon wheat, cotton and tobacco alone, the extras would all suffer to a greater extent by the reduced home demand; hence the price of land would be still further reduced, and our improved and improving agricultural prospects be thrown back. We find by statistics that the more a State becomes manufacturing the more the agriculturist prospers, and the higher the price of land becomes. On the other hand, purely agricultural States are generally poor, have few badly paying railways, and enterprises depressed.

4th. I fail to see what benefit the agriculturist would receive from free trade, except buying a few articles for a little less money, and he would lose ten times as much in other ways by its adoption. The revenue is raised principally upon luxuries which the agriculturist need not use unless he can afford them.

For the benefit of the agriculturist, the employee and the manufacturer, protection for a time appears to me to be the wisest policy to support, so that Virginia and the South may be a partaker of the same blessings that has made the North rich.

Richmond, Va., July 7th, 1884. T. W. Wood.

A TALK WITH AN AUGUSTA FARMER.

[For the Southern Planter.]

Mr. Editor,—There is, a mile or more south of the village of Fishersville, a famous spring on the west side, and near to the old Staunton and Scottsville road, that in the zenith of Scottsville's big trade was known by every man who waggoned the road as the "Lawrence Spring." It is in the centre of a farm of two hundred and fifty or three hundred acres of a thin, black, gravelly soil, that the crow, in flying over it, would have to obey the cruel order issued by Sheridan, and *carried out* (when young Meigs was killed in sight of Dayton, Rockingham Co., in a fair, square, hand-to-hand fight with two of his soldiers and Frank Shaver and the two Martins on our side)—dwellings, barns, mills and everything must be so destroyed—the aforesaid crow must carry his rations with him.

This farm has been tenanted some years by Capt. James Carson, a chip off an old block, as his father, the late —— Carson, near Midway, in this county, thirty years ago had the reputation of being the best farmer in that end of the county. Capt. Carson, like Mr. White, of Albemarle, treated of so interestingly in your last number from the pen of our friend, Dr. Dickinson, who writes sensibly on agriculture as well as religion, does not carry his eggs all in one basket. He tends a garden, from which, although he is eight or more miles from Staunton, he competes successfully with the gardeners near that place. Could you see his wheat crop of this year, although the ground was not plowed until after the first of November, it would astonish you. Last year he made twenty-five bushels per acre on a small field. It was Capt. Carson's wheat crop that brought about the conversation with Col. David S. Bell, now of Fishersville, conceded to be one of our best farmers.

He said that he had for years regarded Capt. Carson as the best

farmer within the range of his acquaintance. But it was because of Col. Bell's opinions and practice on certain mooted points in agriculture, that has induced this article. He is decided in his opinion that too much wheat is ordinarily used in seeding, and that a *bushel* is an abundance under all circumstances. It would make my communication too long to give some interesting details for convincing a skeptical friend of the extent of tillering under *thin* sowing. The maximum I think was from 20 to 110 from one grain, and the average about sixty. He mentioned a fact that observant farmers will sustain him in, and that is that the drill, when new, nine times in ten deposits the grain too deep. That tallies decidedly with my observation, and this fact has been noticed by many farmers, I doubt not, in the Valley particularly. That in seeding corn ground, you can hardly find the ground too hard, if the grain can be covered at all, for success in a crop. In illustration I will give this incident, confirmatory of my theory, that occurred some time before the war. Two brothers were farming the paternal acres a mile or two east of Jennings' Gap, in this county. They cultivated a field in corn, divided by an imaginary line. Both cut up their corn. One flushed the ground with a two-horse plow, but I am not sure if he drilled or sowed broadcast. The other either harrowed and sowed broadcast, or drilled. At harvest, the brother who used the big plow realized little more than his seed, the other made an extraordinary crop.

Col. Bell, as I believed, inaugurated the spreading his straw as soon as he finished seeding broadcast over the land seeded in wheat, and was regarded as wonderfully successful, both in improving the land and securing a fine stand of grass and an increased yield in wheat, and also of spreading it over the thinner parts of land in grass. He says the late Hugh Guthrie inaugurated it, and he followed. There was a serious drawback he discovered in the increased injury from *frost* to the wheat, having it much injured some years where straw was spread. As to improvement to the grass crop, the writer, a number of years since, in riding through his farm, was struck with the extra growth of clover, just coming into bloom, so rank as to lodge on highest upland. He had dressed that heavily with straw. On the writer remarking to him the sorrel seemed to have played sad havoc with the grass crop on many farms we noticed this Spring, and our intercourse with Pennsylvania farmers in 1852, were taught by them to believe it indicated a want of *lime;* he said that had been his opinion, but mentioned this incident: Passing through the Patterson neighborhood, below Waynesboro, he observed the sorrel unusually abundant, and called Mr. Wm.

A. Mann's attention to it. Mr. Mann remarked that he said to one of the Mr. Pattersons he ought to use lime. "Why, my dear sir, come with me to a field where I have hauled out lime in piles, to be scattered, and I will show you plenty of branches of sorrel growing out of the piles."

Before closing, I must mention an interesting fact to the potato-grower. In taking out early potatoes for the table, I was much impressed in observing where there was one or two stalks I got a liberal quantity in the hill, and where the tops were, say, half a dozen, there were either none or very small. Speaking of it to a friend—"Why, sir, my neighbor, Blackwell, (mill-owner), has for years taken as much pains to *thin* out his potato stalks as his corn, and is one of the most successful potato-growers I know of."

Protracted rains have interfered in all this region most seriously with harvest, and I doubt not much wheat will be more or less affected.

OCCASIONAL.

CHESS AGAIN.

[For the Southern Planter.]

Editor Southern Planter,—In the course of your comments upon the replies made by the botanist of the Agricultural Department at Washington to questions propounded to him concerning *chess*, you say on page 362 of the *Planter*, "many deny that the seeds of chess will germinate." You had previously stated that you were one of the doubters, limiting the question, however, by the distinction of "large seed." Did you mean that you believed *small* grains of chess to "possess the power of germination" and *large* ones to be destitute of it?

It would not have surprised me more if you had declared your belief of the utter absence of the germinating power in an acorn or a pumpkin seed. I know a place where chess has been regularly seeding itself for thirty years, or more—no grain grown there. True it is possible that some grain may have been dropped in hauling by that way, but not oftener than once in three or four years by any possibility, the route being used only when a particular field is in crop.

Having stated this that I happen to know about chess, I desire to ask of you or any others who may be informed on the subject, an explanation of the total disappearance from our country of another pest that formerly infested our wheat fields—"darnel" (*Colinum temulentum*), improperly called "spelt." Twenty or thirty years ago this grass infested the wheat fields of Tidewater Virginia, and indeed was abundant along the upper river. It was more dreaded than was chess because,

as indicated by the name "temulentum," it is a poisonous grass, a toxicant, producing effects very similar to those of alcohol, or perhaps more like those of the fish-berry (*Cocculus Indicus*). Prof. James F. W. Johnston relates a case where thirty persons were poisoned in a town in Ireland by bread made of the whole meal of wheat in which there was much darnel; and I have been told by two most reliable men that they had known such consequences from eating "spelty" wheat here in Virginia.

The point I am coming at is that just as many farmers believed, and I think with equal reason, that their grain degenerated into "spelt," so called, as now (and then as well) that it could be transmogrified into chess. The reasons for the one belief are exactly the same as for the other—no more, no less. Why is it, then, that wheat no longer masquerades under that disguise? For years past I have not seen a head of "darnel," whereas my fields formerly abounded with it, though never to the extent that it prevailed in Prince George, Charles City, and adjacent counties. Perhaps it holds its own in other sections, but I hear nothing of it—no complaints from millers or farmers as at the time spoken of.

It may be that the question of the possibility of this sort of plant-degeneration will never be settled. The advocates of the theory will not be satisfied until a negative is proven, and this is impossible. On the other hand, there are many who will not give their assent until something like proof can be adduced that such a departure (seemingly) from Nature's laws has taken place. A single well authenticated instance of a grain of wheat or oats germinating and producing anything else than what was planted—turning to chess or lolium—would settle the question forever. Has any such proof ever been adduced? Rewards have been offered, experiments have been made, but the wheat won't change—*when it is watched!* If it grows at all, it produces *wheat* —nothing else!

The heaviest growth of chess I ever saw was not in wheat or oats, but in timothy and clover. The land had been in wheat the year before, and there was more shattered and scattered grain left on the ground than usual—which admission would seem to fortify the position of the "pro-degeneracy" men. But mark! there was a large ditch running through the field—on one side of it was the rank growth of chess—on the other very heavy volunteer *wheat* and *no chess.* Some of the best of the wheat was cut and threshed. If the wheat on the other side turned to chess, why did not this? A most suggestive fact is that the land where the chess grew so luxuriantly is adjacent to and

just below the slope adverted to above—the place where chess has established itself and held possession for so many years.

The average man's practice is so much influenced by his belief that a question of this sort, which at first sight might appear speculative only, will be found to have a very practical bearing. Let a farmer believe that in some mysterious way his grain may turn to tares—in nine cases out of ten the effect will be to make him relax his efforts to secure clean and pure seed—there will be few, Mr. Editor, who, holding as *you* do, will yet take precautions to ward off the evil. Fatalism may not hurt a Jonathan Edwards, but is dangerous doctrine for the many. I knew a farmer who had been very successful in the long run, yet held opinions that you and I would consider heretical—as that smut in wheat could not reproduce itself. "Some years it would come, others *not!* No use trying to prevent it!" You couldn't get such a man to lime or brine his seed! So of chess, darnel, or cockle. While above all things *truth* should be ascertained, if possible, cost what it may, I wish it could be settled that there is no such thing as change of type so radical as that in question: that literally and exactly, "whatsoever a man soweth that shall he also reap." While I would not be dogmatic, I *believe* that such a conviction would be the first step, and a long one, towards stamping out the pests we are discussing. "Flint," in his book on the grasses, says chess was imported into this country as a valuable forage plant. I think that by a combined effort of the farmers it might be banished from our land forever.

Your friend, RANDOLPH HARRISON.

[The question which our friend, Col. Harrison, propounds to us in the outset of his article would scarcely appear necessary. Had he noticed the connection in which we used the words "large seed," it would be seen that it was only to intensify the force of the doubt expressed as to the germinating power of chess in contrast with the *spores* of the *fungi* which had been referred to. Accepting as proof the facts he mentions, and other facts we have seen stated since our article was written, that chess will germinate, it does not yet disprove the theory of degeneration. Why may not a grain of chess be a degenerated grain of oats, or of wheat, and still capable of reproduction? The seed of an apple, or peach, taken from a very superior specimen of fruit may, and often does, produce fruit very far inferior and of a different type, and yet this degenerated fruit is sufficiently distinctive to be known as an apple or peach. The stalks and blades of a chess-plant so nearly resemble those of wheat and oats that an ordinary observer cannot distinguish between them until the heads and grain are formed; and we are not prepared to say that there is a greater dissimilarity between a grain of chess and one of oats or wheat than that between a very superior apple or peach and a very inferior one. Those who will not admit that there is any reason or sense in the theory of degeneration, say that the chess plants which spring up in a field of wheat or Winter oats, come from seeds in the land, and yet the chess only appears in those spots where the condition of the land is not favorable to a healthy growth of the other grains. No reason can be given

why the seeds of chess are to be found in such places only, or if elsewhere deposited they do not germinate. Chess must be a most wonderful monitor to a careless farmer. It seems to tell him that if he does not use good seed, prepare his land well, and thoroughly drain it, that it will appear and mar his crop, or that its seed will lie dormant and inert under good tillage. There are facts about this question which the scientists do not understand, and cannot explain. It will not do to say that the land is everywhere filled with chess seeds, and that they will, by a simple act of germination, take the place of wheat and oats whenever the conditions of soil and weather are unfavorable to these crops. Will any such hypothesis explain the fact that one hundred acres of a heavy growth of chess succeeded a like quantity and growth of Winter oats at Curl's Neck after the oats had tumbled and re-seeded the land? It seems to us most reasonable that there are causes operating in Nature, not understood, which contribute to produce chess, an inferior grain, from the germs of wheat and oats; and the appearance of chess under many circumstances is so remarkable as to be unexplained in any other way.

We are unable to answer the question propounded in regard to "spelt." We have never had our wheat-fields troubled with this pest, and consequently our observations of it have been very limited. *Spelt* proper is a species of wheat—*triticum*—and is cultivated for bread in Germany and Switzerland, and from its description is very much the same as what is known as spelt in this country. It is described as having a stout and almost solid stalk, with strong spikes, and chaff adhering firmly to the grain. The *darnel* mentioned by Col. Harrison must be a very different plant.—Ed. S. P.]

ENQUIRY.

[For the Southern Planter.]

Mr. Editor,—Will some of your readers give through the columns of the *Planter* the success of the experiment of propagating in this State the Southern Bermuda grass? Farther South this grass is propagated and cultivated both as a *Summer forage* grass and for stopping washes on river banks, gullies, etc.

The present enquiry is made chiefly as to the merits of the grass for the latter purpose—preventing washes, etc.; also, where can the seed be had in the State? Enquirer.

Bordering highways with shade trees has pecuniary as well as æsthetic profits. Real estate is always more valuable along neatly shaded roads than elsewhere, other things being equal. Set a tree wherever one can grow without interfering with travel or crops. Our forests are being constantly destroyed, and the good of the country demands the growing of trees. Set them along walls and permanent fences where they will be out of the way. Plant them in all rocky and sterile places, and especially about the sources of creeks and along their banks. One species of forest tree should not be invariably selected. Select those of different habits and sizes. Try to mix them so that they will present a pleasing appearance.

VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE.

[For the Southern Planter.]

The final commencement exercises of the Virginia Agricultural and Mechanical College took place on July 1st and 2nd in the Commencement Hall, on the College grounds, at Blacksburg.

As this is one of our State institutions, for the purpose of affording to our youth a combined scientific and practical education, to fit them for the ordinary business duties of life, and at a minimum expense to place such knowledge within the general reach of the public, who cannot afford and do not desire a University course, it attracts the earnest consideration of our citizens to the success of this new system. This interest was evidenced by the large attendance of visitors on the occasion, notwithstanding the inclemency of the weather for the preceding two weeks.

Those who attended were amply reimbursed by the very interesting nature and unusual excellence of the proceedings.

The orations and debates by the graduating class and by representatives of the Literary Societies, bore evidence of the excellent course of instruction and to the efficiency of the widely known and respected corps of professors, in imparting knowledge of their respective branches. The cordial hospitality and the constant attention to the comforts of the guests, extended by the officers of the College and the students themselves, were most marked and gratifying and so impressed upon all, that it is doubtful whether a visitor, under the circumstances, could be considered an impartial critic of the performances. The students all acquitted themselves with so much credit, that it would be unfair to to make special mention of any particular one, for each handled his subject in a finely oratorical and finished manner and as a base-ballist would say, "there was not a single error."

The Hon B. B. Munford, member of the House of Delegates from Pittsylvania, delivered the oration before the Literary Societies, and the chaste, appropriate and forcible language, adorned by the oratorical powers and grace of the speaker, well deserved the universal applause with which it was greeted, as did also the earnest and happy remarks of President Conrad and Mr. J. Hampton Hoye of Christiansburg, in delivering the diplomas and medals. After the conclusion of the regular exercises Col. Randolph Harrison, our State Commissioner of Agriculture and Mr. George W. Mayo, Secretary of the Virginia State Agricultural Society, who were present because of the kindred nature of the collegiate instruction and their own occupations, delivered extemporaneous addresses to the students and visitors. The pro-

ceedings were much enlivened by very fine music by a brass band composed entirely of students. The location of the College, nestled among the top of the Alleghanies, surrounded by the rich waving crops and beautiful blue-grass sward peculiar to that country, challenge the admiration of the visitor and fill the soul of the Virginian with pride and joy that *his* State possesses such agricultural wealth, magnified by the unsurpassed mountain scenery.

President Conrad, in addition to his professional duties, superintends the large farm connected with the College, employing no manager, but having as his assistants some of the students, who keep detailed accounts of the weather condition, yield and quality of the crops, and take charge of the various farming operations and thus, while making the place almost if not fully self-supporting, derive a knowledge and experience that will prove of immense practical benefit to themselves hereafter. In the centre of the College library, glass cases are arranged, some containing samples of the varieties of grain and seeds; some with varieties of woods; and others with specimens of every kind of ore, mineral and fossil, mentioned in the curriculum of their studies, so that the student has not only a theoretical but a practical knowledge of the subject. The military feature connected with the college has unquestionably a very beneficial effect upon the health, physique, grace and character of the students and tends materially to the *mens sana in corpore sans.* A great attraction, to one who has boys himself, centres in the President's house, to which the students have free access, and where that noble woman, Mrs. Conrad, displays a never failing interest and sympathy, that has cured many a home sick heart and been a motherly guard to many a thoughtless, erring youth.

The thorough course of combined scientific and mechanical education provided by the State at the Blacksburg College, will prove a great factor in the development of our agricultural and mineral resources and in the character and intelligence of our people; and it is to be hoped that our farmers especially will feel the great advantage and importance of giving their sons the benefit of that economical system of instruction.

VISITOR.

A well-known writer on agricultural matters says that the degree of usefulness of commercial fertilizers in agriculture is largely a matter of locality; that no one rule can be given for using them, that will fit all alike.

"JERSEY CATTLE."

HOW TO RAISE AND FEED THEM—"CLOSE BREEDING" COMPARED WITH THAT OF OTHER ANIMALS.

BY CHARLES O. ELLMS.

To the Editor Massachusetts Ploughman:

But the pig is not strictly gregarious and appears eminently liable to the evil of close interbreeding, and it is attributed to its being cultivated for its fat. Mr. Fisher Hobbs, the raiser of the celebrated improved Essex breed, divided his stock into three separate families, by which means he maintained the breed for more than twenty years. Mr. Coate, who five times won the annual gold medal of the Smithfield Club for the best pen of pigs, says, "crosses answer well for profit to the farmer, as you get more constitution and quicker growth, but for me who sell a great number of pigs for breeding purposes, I find it will not do, as it requires many years to get anything like purity of blood again." We see what man has done in recent times with selection, Collings, Bates, Webb and others. We find also that in ancient times they had good stock in view, as in Genesis rules are given for influencing the color of sheep. Moses says, "Thou shalt not let thy cattle mix with a diverse kind." In the time of David the fleece was white as snow. It is said that Erichthonius some generations before the Trojan war had many blooded mares which by his care and judgment in the choice of stallions produced a breed of horses superior to any in the surrounding countries. Homer (Book V.) speaks of Enea's horses as bred from mares which were put to the steeds of Laomedon. Alexander the Great selected the fine India cattle to send to Macedonia to improve the breed. According to Pliny, King Pyrrhus had a specially valuable breed of oxen, and he did not suffer the bull and cows to come together till four years old, that the breed might not degenerate. Virgil in his Georgics (Lib. III) gives advice carefully to select the breeding stock, to note the tribe, the lineage, and the sire, whom to reserve for husband of the herd, to brand the progeny, to select sheep of the purest white and to examine if their tongues are swarthy. We find the Romans kept pedigree of their pigeons.

When we purchase a cow we want one with a large udder; of course a cow of that description will have a good escutcheon. As some readers may not know what it is, I will say a few words in relation to it. It is called by that name as it resembles a shield or escutcheon, or like a round pointed shovel. The hair on it is generally of a different color, very fine and grows upwards, on the rest of the animal it grows downward. It extends on the back of the udder up the perineum and on the rear of the thighs.

Guenon, the discoverer of the escutcheon, divides them into ten classes. The first and best he calls the Flandrine, named from Flanders, where he found the best cows; it is vertical and extends up the perineum and on the rear thighs. Neither Jersey Belle of Scituate

nor Eurotas had a Flandrine escutcheon. The former had a Limousine, named from that province in France. The latter a horizontal. The former went up to point six inches above the udder; the latter two inches below the top of the udder, both were wide out on the rear of the thighs.

We find cows with a Flandrine escutcheon are long bodied, with the same depth of body through, while those with wide thigh escutcheons are like the two cows spoken of, wedge shape, which are preferred, as these two cows are considered the type of a cow. Jersey Belle is considered by all Jersey breeders the nonpareil of nonpareils, but Eurotas beat her by having higher feed. The Greeks rendered divine honors with garlands of myrtle and laurel to Eurotas the beautiful, as it coursed by the city of Sparta, and Eurotas with her laurels of butter production is justly entitled to be named after that classic stream.

To the lover of the beautiful what finer sight than a herd of Jerseys grazing on the emerald hill sides taking their swaths in unison together? We all remember that the great statesman in his last illness had his noble herd brought before him that he might gaze on them for the last time, and were he living what interest he would take in the Jersey breeding of to-day. His fine lawns would be dotted with these choicest gems of the land. In rearing the young I let the first calf suck its dam for the first four weeks. The second and future calves I take off when two days old, and for one week I give them new milk and change gradually to warm skim milk and oatmeal. I keep them that way from four to six months. When young they should be fed often. I find I raise the best calves this way.

We will now come to the feed. There is an old saying that the "breed is in the mouth." The cow in her wild state develops muscle and growth of body. Gradually bring her to rich diet and comparatively rest, in a few generations she becomes a different animal and yields a large quantity of milk; but feed her on poor diet and she degenerates, and in a few generations she loses nearly all her fine milking qualities. So you see how essental good feed is.

On the Island of Jersey her care has been such as to bring her milking qualities to a high state of cultivation. Tethered so as not to have much exercise, the growth of muscle was checked and their food went to the production of milk, and owing to the small area interbreeding was resorted to, which had much to perpetuate their butter qualities.

Grass is a natural food for cattle, it furnishes albuminoids and carbohydrates in just about the right proportion naturally adapted for animals, so therefore we should try and have our hay as near the grass as we can. I find grass cut early in June is the thing desired. It then contains its best proportion of albuminoids, about 75 per cent. is digestible. I mow it and soon cart it close to the barn, so that when the weather is doubtful I put it into the barn floor, having thirty feet space for its occupation. It is not a very heavy job to put it out to make it. By this method I have the hay very near like grass as you may say, I have the pasture in the barn.

SCRUB STOCK.

The farmers of the south have been severely criticised for their so-called scrub stock. There may be just cause for the censure. It must be confessed that the farming population of the south, no matter what the number of stock they may own, seldom have, the year round, enough butter and milk on their tables to supply their families. If butter and milk is not the chief end of cattle raising, at least in this section, what is? Surely the uncertain supply of a quarter of beef or veal once or twice in the year, and the possession of a hide now and then to sell, is not all that our people are raising cattle for, even scrub cattle if so it be.

Evidently something is wrong somewhere. What is the cause of this general and always prevailing dearth of milk and butter. Is it because of scrub stock? No; but it is because of scrub pastures. It is for the lack of that indispensable element in successful dairying, good grass and enough of it. It is not because stock has run out, but because the grazing has run out, or rather has never run in. Our own native stock, with what admixture of better blood there may now be in the country, would do well enough, if we would feed and care for it as we ought and can.

True our cattle, as a rule, are small, yield but little milk, make but littel beef. But that is not so much in the blood, after all. The first need is, good grazing. It is idle to talk about improving the stock before we improve the pasturage. It is the scrub pasturage that has made the scrub cattle. And it will continue to make scrubs of any thing you put upon it, till you set about making it better.

Our cattle has one recommendation at least that the imported cattle has not, and this ought to be well considered before you decide to reject it for your costly Alderneys, or Jerseys, or Ayreshires, from some far northern herd. That is, it is thoroughly hardy, and able to undergo almost any amount of heat, cold, starvation, and neglect, and still survive. It is fully adapted to our climate and mode of farming, with plenty of life, appetite, and "go", and stands ready to hand to be developed into something better, as soon as that good time in the history of southern stock-raising comes when men shall learn that it takee grass and clover to make butter and beef.

If, then, it is proposed to do away with the inferior grades of southern cattle, let us begin at the foundation and grade up the pastures first. It is our opinion that the grading up of the cattle will follow as a matter of course, yea, even this so-called scrub cattle. Of course it is proper to handle a herd with some judgment. The old and almost inferior individuals should be weeded out, fattened and sold to the butcher for what they will bring. Do this, and *give them grass*, and soon you will see for yourself the cause of scrubbiness.—*Index Appeal.*

A German Farmer in Michigan has tested the waste of a thrashing machine by running the chaff supposed to be free from grain through the fanning mill, and obtained twenty-five per cent. of his whole crop by so doing.

MIXED FARMING THE PROPER CAPER.

I wish to give a few hints about tobacco. How can tobacco be profitably raised? It will not do to plant all of our farms in tobacco and hire twenty or thirty hands and buy all of our corn, wheat, hay, pork, and in fact all we eat and wear. On the contrary, we should raise all of these things at home, and let the tobacco be our surplus crop and we will have a better chance to live and prosper. Tobacco might fail and all would be lost; it is the same with wheat or any other crop—there is no one crop that will do to rely upon entirely. It is suicidal to depend upon any one crop where we haul away entirely to sell and then have our supply of provisions, etc., to haul back. This is not only waste of labor, bnt is money out of the farmer's pocket. Lost labor brings on poverty and poverty brings bankruptcy and ruin. I would not be so plain if these things had not have happened here in this tobacco country, as we call it, when I was a boy. But I am thankful it is a thing of the past with the most of the farmers in these parts.

The old plan in this country was to clear a piece of land and go to plowing and growing crop after crop in succession and encouraging the soil to waste away to make up sand-bars and islands in the river and gulfs, permitting that to go to ruin, and clear another by the side of the one that is being worn out. But this plan will play out after awhile, and the next generation will have to bring these old worn out fields into cultivation again or starve. Would it not be better to take care of our land and try to keep it in its virgin state by grass and diversified crops? Farmers try to cultivate too much land, and cultivate that poorly. Would it not be a good plan to cultivate less ground and improve the remainder?—is not one acre of good land well cultivated worth two acres of land poorly cultivated? One acre of land that will make forty bushels of corn will be worth as much to us as two acres that will only make forty bushels. Now smaller crops of grain, cotton and tobacco would not make the result smaller—there would be as many pounds and bushels—if not more, and we would have more grass and stock, and that would be to our gain two ways—less work and more stock—saying nothing about the improvement of our land and having the pleasure of always being up with our work. We would then have a little time to attend to our bees and attend to the garden work. I believe I get my best pay for the work that I do in the garden. I find without a good garden there is but little to eat when I go to the table.

I receive letters frequently from inexperienced tobacco growers, and would say to one and all, go on a small scale until you first learn how to cultivate the weed.

G. C. Lovelace, Massack, Ky.

On most soils it is very important to have manure well decomposed by the time we are ready to apply to the crop it is intended for.

DRY STRAW WITH GREEN FODDER IN A SILO.

[A communication from Mr. Lacey was in type for our present issue before the receipt of the following. We thought his suggestion of sound and dry straw cut up and placed in light alternate layers with green fodder in a silo might be advantageous by increasing bulk and acting as an absorbent of the juices of the fodder, and at the same time prove a corrective of acidity, and so worthy of trial. The *sauer-kraut* taste of ensilage from green fodder has been one of its greatest objections, and our friend Guy's suggestion and experiment with partially cured fodder was the first to remove this objection. In the early part of this year he communicated to the *Planter* his experience in this respect, and since then we have seen the idea advocated by farmers who have the largest experience with ensilage. Mr. Lacey's suggestion is in the same direction, and should be tried. It is in this way only that the best methods can be arrived at.—Ed. S. P.]

Editor Southern Planter,—I forward the enclosed to you for examination. I did not write Mr. Brown, and presume he has been handed my letter sent the *Country Gentleman*, in which paper it recently appeared. Had I addressed him direct, I should have submitted a query or two not touched by him. The point I am driving at is the utilization of straw for store stock. I admit the possible deterioration for milk cows, because they demand the best of food, but for our permanent animals that are used for the express purpose of eating roughness, the question naturally arises, Is not that roughness bettered by contact with ensilage to a far greater extent than the ensilage is depreciated? Complaint is made that the juices fill the bottom of the silo and must be drained off. Why not absorb them with a foot or more of finely-cut straw? The fact that some have failed in attempts to combine straw and ensilage, proves nothing, unless we admit that exceptional failure condemns the whole system, and I wish some of our experimentalists would carefully test the matter. Small silos are generally urged, and it does seem to me that one of these should be filled experimentally by some of our extensive siloists.

Truly yours, R. S. Lacey.

New York, July 8th, 1884.

Mr. R. S. Lacey:

Dear Sir,—I shall be happy to give you the desired information as to straw in silo. In the original treatise of M. Goffart, which I published in this country in 1878 (now out of print), this subject was treated. The result of the French, as well as of the American, experiments, is that any mixture of straw or dry material is injurious—also salt. It is better for the material to be all alike, and sufficiently matured, if possible, to prevent leakage of juice; but if the crop is not sufficiently matured, by reason of lateness of season, or rather of planting, then it is better, notwithstanding, to ensilage it as it is, with less weight on cover and without trampling. So much has been written about ensilage by persons with little or no experience, that the subject

is as yet very little understood by farmers, and I propose, in connection with Report of Third Ensilage Congress, to publish certain experments, or rather experiences, and to explain certain matters in connection with it. Do you know of any silos or ensiloers in Virginia, Maryland, or District of Columbia? The first one built in this country was in Maryland, in 1876, and is still used.

Respectfully, J. B. Brown.

LIVING FROM THE GARDEN.

Gardners, and above all farmers, have no business to live meanly, or to think of themselves as obliged to drudge ceaselessly without the indulgencies of other classes. One has no business to see town folk having early vegetables and berries a month before his tardy supply comes on, to be out of them in dogdays before the merchants and cheap boarding-house keepers in the city have begun to see the end of fresh things; he has no need to live on doughnuts and boiled dinners the year round, when others try the changes of spring lamb, fresh fish, boiled chicken salads, ducks and green peas, capons and veal till turkey time comes again. He ought not to see town homes fragrant with flowers, while his wife has only a bunch of Syringa and Cinnamon Roses, with a tuft of Asparagus to sweeten her parlor when she thinks to pick them. What better right have rich men to sit over deserts of choice pears, plums, grapes and apricots, while he must content himself with a Baldwin apple in mid-winter? Who should have a becoming home with its lawn in front, and wide borders of the richest flowers; his house, one story and small, perhaps, yet hung with woodbine, wild grapes and roses against the back-ground of orchard and nut trees, spreading their flanking boughs with good effect as if it were a cottage ornee, with its acres of shrubberies. Why should he not have in his garden choice of fruit for the season, strawberries, currants, and gooseberries jostling each other in earliest perfection, red and black cherries, golden and purple plums, plenty of black-caps to make up for the lost strawberries, and grapes as soon as raspberries are over, big blanched salads and peas in succession, as well as his town neighbor who sells him groceries and cotton? Why should he not have as fine pears, peaches, winter apples and grapes at Christmas as well as the President of the Horticultural Society, and why should not his girls have big French roses and tub-roses as well as the solitary Dahlia and China Aster, which decorate the yard, and the common Geranium indoors? Why doesn't he have a herb bed to make his plain dinner savory, and lavender to sweeten his sheets at night? A poor English cottager will have all these by thrift and contrivance. Why not an American farmer? He has land enough and must have a grass field. Why not put it in front of his house instead of behind it, and instead of making his cabbage and potatoes his main features of the place, why not screen them from the road and from sight by a belt of choice fruit trees, and have trees to shelter his cattle outside the barn fence, shutting off all that is unsightly? Why

doesn't he raise plenty of fowls, pigeons, and a sheep or two on his lawn, to supply his table, to find fertilized for the pining garden, and yield his wife pin money, instead of paying so much to the butcher and buying salt fish by the box? Plants cost money, do they? Your wife spends enough for baking powders weekly to buy a fine tree or choice rose; instead of making good yeast bread, as her folks did. She buys a shilling's worth of cheap edging for the pinafores instead of making neat hemmed ruffles, and spoils more cretonne and red canton flannel with bad fancy work than would stock a garden year by year. Then the children must have their five and ten cents worth of candy every time one goes to the store, when fruit would be much better for them, and the money would buy flowers and flower seeds. You might have enough to stock the garden, buying groceries by the month's supply, instead of from hand to mouth, or by taking care of the tools and things you have, so as not to pay so much for repairs. I won't say anything about the fireworks you subscribed for election night, or the excursion that gave your wife a sick headache the week after, nor the jig-saw or card printing press you must buy for your hopeful, because the other boys each have one and you are tired of his teasing. Nor of the horse you lost by leaving him sweating at the grocery door, one cold day, while you stopped to just get a pound of soda, and hear what all the loungers had to say. Of course you can't have anything like the rest of folks, it is not in nature, your own nature that you should. Susan Powers, *in Vicks Monthly.*

NEW ORLEANS EXPOSITION BUILDING.

The Boston *Herald* says that the main building of the New Orleans exhibition is in some respects the most remarkable edifice ever built in this country. It is much the largest exposition building ever erected in the world. The architect has succeeded, at a moderate cost, in producing the largest single room, every part of which can be seen from any point, of which there is any knowledge. The building is 1,378 feet long by 905 feet wide, and covers 33 acres, or 11 acres more than the Philadelphia Centennial Exposition of 1876. There are 1,656,300 square feet of floor space, including gallery. The reader may form a better impression of the vast dimensions of the structure by imagining three ordinary city blocks one way and five the other covered by a solid roof. And, if he chooses to allow his fancy carry him still farther, he can picture a monster panorama of the world's industry, extending before his vision uninterrupted by a single object except the supports.

The active commercial rivalry of the different sections is aptly shown by the distribution of contracts for the materials. The roof, which will cover 1,000,000 square feet, is being made in Cincinnati. The window sashes come from Milwaukee, Wis. The glazing will be done by St. Louis parties. Four thousand kegs of nails are being shipped from Wheeling, W. Va. Nine million feet of Mississippi lumber will be consumed. A massive group in bronze, typical of America, to be placed

over the main entrance, is being made at Canton, O., as are also a statue of Washington and Columbus, and coats of arms of all the States, which will appear in medallion form as part of the exterior ornamentation. Finely modeled cornices are being made at New Orleans. The building will be 60 feet high, with a tower 115 feet high, and the architect has been fortunate in rendering the exterior unique and attractive. A platform will be erected on the tower, reached by elevators from which visitors may have an exceptionally fine view of the city of New Orleans, the exposition grounds, the Mississippi River, and the surrounding country. There will be one line of gallery extending around the entire circumference of the building, to which visitors will will be carried by 20 steam and hydraulic elevators, representing all the manufacturers of these conveyances in this country.

The music hall, situated in the centre of the building, will be 364 feet wide, and will comfortably seat 11,000 persons. A platform is being built for 600 musicians. To light the building with incandescent lamps will require 15,000 lights and 1,800 horse power. To light with the arc system will require 800 lamps, and 700 horse power to operate the dynamo. The total steam required for lighting and for the machinery hall will be at least 3,000 horse power. In this estimate is included the power for five arc lights of 36,000 candle power each, which will light the grounds. These are the largest single lamps ever constructed. The cost of this great structure, lacking no single desirable featurfore the purpose intended, will only be about $400,000, and the other buildings will be proportionately inexpensive.

THE GOSPEL OF AGRICULTURE.

Not long ago I found a brother farmer in a very bad case. He said that it had actually come to it that a man could not make a living in this country, and if he could find anybody to give his land to he was going to hunt new ground. I was sorry for him for he did look powerfully long faced. Says I: "Have you tried to make a living at farming?"

"Have I tried?" he said with a look that indicated that I was a fool. "I have worked myself and folks nearly to death, and we have been getting poorer every year." "That is strange," says I, "some people do make a living right here in this country. I have not found it hard to do."

After taking a long look at me, he said: "I carried my last cotton to market t'other day, and when I went to square up I was left in debt for meat and bread last year, and now I have got everything to buy this year. Them merchants just take all a poor farmer can make and then they ain't satisfied. We all work hard and have nothing, and we are always in debt. This is no country for a white man." As he said this his voice trembled and he shook. It made me real sorry; for he is a good, hard working man. Said I: "How do you manage, Zeke Pitkin; do you make a good garden and have plenty of vegetables in their season?" Looking down at his feet, he replied: "Do you reckon I have

got nothing to do but work in a garden? I tell you it is all I can do to work my crop." "Well," says I, "you have been on the same place fifteen years—reckon you have got lots of fruit of different sorts to eat in the summer and fall and to put up for the winter." "I reckon I ain't. I need my land for my crop, and land with trees on it won't fetch a crop." "Do you raise plenty of Irish and sweet potatoes to do you?" "Plenty while they last; that ain't long?" "Do you keep cows to give you butter and milk?" "Sometimes." "Does your wife raise plenty of chickens and turkeys, and such like?" "How can she, when she has to help me with the crop?" "Do you make plenty of corn, oats and hay for your own use?" "Of course I don't when I am obliged to put in a full crop of cotton to pay my debts and buy something to eat." Several fellows sitting round said: "That's what's the matter with Sallie." Says I. "Friends, I want to tell you what is the matter with Sallie, and Mary and Jane, and Tom and Bob and Zeke here, and all the rest of you. You say you can't make a living, and the truth is you are not trying to make a living. You are trying to make money by raising cotton to buy a living with, and there is no reason in that. Now, listen to me a little, for your own good: You and yours toil the year round to make cotton, and then you get your meat from 1,000 miles away; corn, flour, hay, and so on come the same way. The Yankees sell us their grass at a big price, and we work ourselves to death to kill grass. If you will do as a I tell you, inside of three years every one of you will be easy." Several of them spoke right out and said: "Let us hear it." "Very well," I said, "go home, and to-night get your wives and children all round you, tell them just how you have been doing and how it has worked. Then say I propose to turn over a new leaf. First we will not spend one cent we can help—not a cent for tobacco, whiskey nor clothes more than is necessary. We will get cows enough to give us plenty of milk and butter, and we we will attend to them, and we will get some cows and pigs and look after them. There will be a good garden and plenty of chickens raised. We will plant plenty of potatoes, corn and whatever is to live on. In short, we will go in to making a living first, and something to sell next. You will find all will agree to it. Then just stick to that for three years, and my word for it, you will never say again that a living can't be made in this country.

"Now if any of you doubt it come to see me, and I will show you that it can be done, and I will show you that it is done."

I saw that it took, so I followed up my licks and said: "Now, friends, don't flinch, don't keep your trouble to yourself, and when it pinches you do not buy on credit, like your neighbors do and like you have done; don't give up. Just settle it with yourself and family, you will be free and you will come out right."

When I got through I thought the world was pretty good, so I shook hands all round me and said, "Good evening friends, I wish you success." As I walked off, one fellow said, "I see it—his head is level;" and Zeke said, "you're correct for a fact."—*Baptist Record.*

WHEAT AND CHESS.

Forty Years' Experience by a Canadian Farmer.

[For the Southern Planter.]

Editor Southern Planter,—I see an article in the July number respecting chess or cheat, and after reading the editorial I fully endorse your views. In Ontario, Canada, wheat is our staple crop, and great attention is paid to it, and here there are different opinions as to wheat turning to chess. Among practical farmers the general opinion is that the plant from wheat produces chess. I have grown Winter wheat every year for forty years, and from the experience I have had I am convinced chess is produced from wheat. Now, first, to show the cause; second, the remedy. The cause is, the frost kills or injures the germ that should produce wheat; the plant is not killed, but the germ producing wheat is killed at the plant's earliest stage, while it is commencing to stool; the growth goes on, but the product is changed to chess. I had a field of wheat three years since, Summer fallowed—wheat had never been sowed on it before. We had a wet Winter, a cold, backward Spring; the land was level and well landed up, but not sufficiently drained clear across the field. Where the lower part of the ridges came together was wet, and the land hove with the frost. There was mostly chess, whilst on the centre of the lands, being well drained, was good wheat. I had a field of wheat (new land), was well put in, no chess in the seed; had every appearance of being a fine crop until it begun to head out—one-half is chess. We had a very open Winter, with freezing and thawing. I am of the opinion the damage was done on the 28th of May. We had a heavy frost that did great damage. It killed the meadows. The wheat at that time was tender and just commencing to stool.

As to chess growing and producing its own kind, there is no doubt about that. I sowed chess last Fall, and it is now headed out, producing chess. The best and only plan to prevent chess is good drainage as far as possible to prevent Winter killing. When we have snow to cover the ground, and early Spring, we do not have chess. I do not think it a good plan to roll wheat in the Fall, it is better to have it cloddy.

I see a remark of the Curl's Neck farm, on James River, of Winter oats producing chess. I can tell you of a field of oats here, sowed in the Spring, and the crop grew very heavy and fell to the ground; was not cut, and cattle tramped over them. The next Spring the field was closed up; then sprang up a heavy crop, which, when headed, was a field of chess. Last Winter here was unfavorable to wheat—hard frosts and thaws, backward Spring. Many of the wheat fields are half chess.

Wallaceburg, Ontario, Canada. MILES LANGSTAFF.

ANALYSES OF FERTILIZERS BY THE VIRGINIA DEPARTMENT OF AGRICULTURE—SEASON 1884.

RANDOLPH HARRISON, COMMISSIONER OF AGRICULTURE. DR. W. J. GASCOYNE, CHEMIST.

Number of Analyses.	NAME OF BRAND.	Moisture, Per cent.	Soluble Phosphoric Acid Per cent.	Reverted Phosphoric Acid. Per cent.	Total Available Phosphoric Acid. Per cent.	Insoluble Phosphoric Acid. Per cent.	Nitrogen. Per cent.	Equivalent to Ammonia. Per cent.	Potash, Per cent.	Relative Commercial Value.	Cash Price Per Ton.	MANUFACTURER.	Where Manufactured.	Where Sampled.
417	Ammoniated Dissolved Bone	10.76	8.57	2.63	11.20	1.15	2 10	2.55	1.63	$32 31	$38 00	Lister Bros.	Newark, N. J.	Richmond.
419	Special Compound	11.45	8.03	1.86	9.89	2.31	2.66	3.23	1.87	32 96	40 00	The G. Ober & Sons Company	Baltimore	Richmond.
422	Dissolved South Carolina Bone	10.66	8.73	4.75	13.48	2.91	.....	.....	.....	24 26	30 00	" " "	Baltimore	Richmond.
420	A. A. Phospho. Peruvian Guano	11.86	5.98	5.68	11.66	2.47	2.52	3 06	2.71	36 47	55 00	" " "	Baltimore	Richmond.
421	Soluble Ammoniated Superphosphate	11.15	7.64	2.34	9.98	2.68	2.31	2.80	1.78	31 29	38 00	" " "	Baltimore	Richmond.
426	Dissolved Bone Phosphate	8.07	8.80	3.72	12.61	4.55	.....	.....	....	22 69	30 00	The Pacific Guano Company.	Massachusetts	Richmond.
460	Soluble Pacific Guano for Tobacco	12.13	6.73	2.39	9.12	3.12	3.09	3.76	2.91	34 91	45 00	" " "	Massachusetts	Blac's&Whit's
428	Eureka Ammoniated Superphosphate	12.67	8.91	1.73	10.61	3.01	2.20	2.67	.....	29 83	35 00	Atlantic and Va. Fert. Co.	Richmond	Richmond.
429	Our Acid Phosphate	13.27	10.14	2.67	12.81	2.96	.....	.....	.....	23 05	22 00	" " "	Richmond	Richmond.
524	Dissolved South Carolina Bone	11.50	8.31	5.13	13.44	3 83	.....	.....	.....	24 19	24 00	William Davidson & Comp'ny	Baltimore	Harrisonburg
418	Lister's Ground Bone	4.19	.....	.....	.....	14.90	2.72	3.31	.....	.....	38 00	Lister Bros.	Newark, N. J.	Richmond.
424	Pure Ground Animal Bone	7.05	.....	.....	.....	23.24	3.72	4.52	.....	.....	38 00	J. G Tinsley & Co.	Richmond	Richmond.
430	Orient Complete Fertilizer	11.13	8.15	2.07	10.22	1.34	2.02	2.46	1.53	30 06	35 50	Atlantic and Va. Fert. Co.	Richmond	Richmond.
463	Game Guano	12.24	5.83	2.98	8.81	3.47	1.77	2.15	2.17	27 05	38 00	Baltimore Guano Company.	Baltimore	Farmville.
436	Soluble Potash Phospbate	9.56	2.43	4.07	6.50	7.57	.....	.....	2.91	15 19	25 00	Charles Held & Sons	Norfolk, Va.	Norfolk.
472	Excelsior No. 1 Peruv. Gu'o & Sol. Phos.	7.89	6 30	4.25	10.55	3 20	4.20	5.10	1.61	41 32	48 00	J. Q. A. Holloway	Baltimore	Lynchburg.
455	Owl Brand Tobacco Fertilizer	15.41	6.91	3.27	10.18	1.83	3.69	3.27	1.66	33 39	40 00	Davie & Whittle	Petersburg	Blac's&Whit's
542	Empire Guano	12.86	5.81	3.30	9.11	2.28	2.29	2.78	1.56	29 38	32 00	Rasin Fertilizer Company	Baltimore	Staunton.
543	Acid Phosphate	13.33	6.46	5.67	12.13	2.87	.....	.....	.....	21 83	22 00	" " "	Baltimore	Staunton.
453	Bellefonte Phosphate	7.06	2.39	2.87	5.26	5.62	3.85	4.67	1.96	30 49	35 00	Epes, Tuggle & Company	Blacks & Whites	Blac's&Whit's
451	"Hard Cash"	7.05	2 55	4.33	6 88	4.12	2.49	3.03	2.27	27 22	30 00	" " "	Blacks & Whites	Blac's&Whit's
510	Va. Ammoniated Dissolved Bone Phos.	11.21	5.57	3 82	9.39	1.19	2.73	3.32	2 27	32 90	32 00	Valley Fertilizer Company	Charlesto'n, WV	Berryville.
484	Piedmont Guano for Tobacco	12 27	6.56	3.19	9.75	2.13	2.27	2.76	3.17	32 39	45 00	Piedmont Guano Company	Baltimore	Danville.
534	Pure Bone Meal	6.79	.....	.....	.....	22.76	3.64	4.42	.....	.....	40 00	Patapsco Guano Company	Baltimore	Staunton.
533	Pure Bone Meal	7.70	.....	.....	.....	23.98	3.57	4.33	.....	.....	40 00	The G. Ober & Sons Company	Baltimore	Staunton.
468	Tuckahoe Tobacco Fertilizer	14 05	6.68	3 04	9.72	2.94	2.09	2.54	2.21	30 30	35 00	W. P. Dupey	Worshams, Va.	Farmville.
465	"Excellenza" Soluble Phosphate	10 86	6.40	3.35	9.75	2.59	2.31	2.80	.....	28 75	38 00	Long & Dugdale	Baltimore	Farmville.
442	Pocomoke Superphosphate	14.30	5.24	3.85	9.09	1.18	2.13	2.58	3.99	31 43	36 00	Freeman, Lloyd, Mason & Co.	Norfolk	Norfolk.
441	Fish Hawk Guano	14.26	.70	5.76	6.46	2.81	1.54	1.87	2.81	22 47	28 00	" " "	Norfolk	Norfolk.
515	Piedmont Dissolved Bone Phosphate	11.83	5.28	6.11	11.39	2.87	.....	.....	1.57	22 38	26 00	Piedmont Guano Co.	Baltimore	Berryville.
507	Diamond Soluble Bone	10.05	6 87	5.68	12.55	3.37	.....	.....	.....	22 59	28 00	Walton, Whann & Co.	Wilmington Del	Berryville.
509	"Potomac" Am'oniated Dissolved Bone	11.77	6.36	2.88	9.24	1.71	1.17	1.42	2.43	25 22	29 50	Valley Fertilizer Co.	Charlesto'n WV	Berryville.
462	"Oriole" Tobacco Fertilizer	10.36	7.77	2.86	10.63	1.50	2.32	2.82	1.87	32 65	32 00	Symington Bros.	Baltimore	Burkville.
535	Baker & Co.'s Soluble Superphosphate	10.46	7.26	4.72	11.98	3.24	.....	.....	2.19	24 18	27 00	Baker & Co.	Winchester	Strasburg.

482	R. D. Sea Fowl Guano	11.85	7.89	2.30	10.19	2.15	2.50	3.04	1.97	32	86	45	00	Bradley Fertilizer Co.	Boston	Danvillo.
481	Plow Brand Superphosphate	10.81	6.10	4.29	10.39	2.43	2.59	3.14	2.38	34	11	42	50	Walton, Whann & Co	Wilmington Del	Danville.
439	Imperial Guano	10.26	2.73	3.92	6.70	2.95	7.39	8.97	4.56	52	53	60	00	Imperial Guano Co	Norfolk	Norfolk.
457	Zell's Calvert Guano	8.79	9.14	2.39	11.53	2.86	1.12	1 36	1.43	27	90	.....		The Zell Guano Co	Baltimore	Blac's&Whit's
456	Zell's Economizer	9.66	7.54	3.41	10.95	2.80	1.46	1.78	1.16	28	22	.....		" "	Baltimore	Blac's&Whit's
528	Dissolved South Carolina Bono	10.25	9.33	3.24	12.57	2.65	.....	.....	.....	22	62	19	60	Loronts & Rittler	Baltimore	Harrisonburg
440	Peruvian Mixture	8.46	6.30	4.03	10.33	2.77	2 10	2.55	2.43	31	70	35	00	The American Fertilizing Co.	Norfolk	Norfolk.
449	Bone and Peruvian Guano	11.41	6.52	3.75	10.27	2.65	2.60	3.16	2.11	33	65	35	00	Upshur Guano Co	Norfolk	Norfolk.
548	Brawner's Fertilizer for Spring Crops B	14.86	6.43	3.48	9.91	2.18	1.42	1.73	1.37	26	39	25	00	C. E. Brawner	Manassas	Manassas.
549	Brawner's Fertilizer for Spring Crops A	14.05	6.65	3.36	10.10	2.78	1.96	2 38	1.68	29	54	35	00	" "	Manassas	Manassas.
550	Dissolved South Carolina Bone	14.15	8.57	4.58	13.15	3.06	.....	.....	.....	23	67	20	00	" "	Manassas	Manassas.
551	Brawner's Pure Bone Meal	6.27	.....	.....	.....	23.68	4 06	4.93	.....	.....		38	50	" "	Manassas	Manassas.
438	Pure Raw Bone Dust	8.16	.....	.....	.....	16.67	3.26	3.74	.....	.....		38	00	Charles Reid & Son	Norfolk	Norfolk.
488	Bryant's Standard, No. 2	8.27	6.11	4.52	10.63	4.02	3.92	4.76	3.98	42	94	42	00	Herbert Bryant	Alexandria	Alexandria.
489	Bryant's Ammoniated Dissolved Bone	10.85	6.81	3.65	10.46	2.62	2.48	3.01	1 15	32	24	32	00	" "	Alexandria	Alexandria.
529	Barlorento Island Guano	13.42	.....	15.92	15.92	6.21	.....	.....	.....	28	65	20	00	Lorentz & Rittler	Baltimore	Harrisonburg
497	May's Standard Guano	9 66	5.31	6.53	11.84	5 04	3.90	4.74	3.46	44	42	48	00	W. H. May & Son	Alexandria	Alexandria.
498	May's No. 2 Fertilizer	10.55	7.29	5.25	12.54	3.45	2.72	3 31	2.27	38	53	42	00	" "	Alexandria	Alexandria.
495	Cooke's Blood Guano	10.77	4.87	3.11	7.98	2.86	1.82	2.21	1.57	25	08	40	00	National Fertilizing Co	Bridgeport, Ct.	Alexandria.
476	Ammoniated Phosphate for Tobacco	12.72	7.13	1.56	8.69	2.04	2.25	2 73	4.88	32	41	40	00	J. G. Miller & Co	Danville	Danville.
501	"Amoricus" Ammoniated Bono	12.06	7.71	2.99	10.70	1.04	2.45	2.93	1.87	33	42	35	00	Williams, Clark & Co	New York	Alexandria.
502	E. Clark's Dissolved Bone	13.45	8.38	1.82	10.20	1.37	2.38	2.39	2.44	32	84	34	00	E. Clark	New York	Leesburg,
527	Ammoniated Phosphate	11.26	5.11	5.56	10.67	3.21	1 80	2.19	2.53	31	00	35	00	Maryland Fertilizing Co	Baltimore	Harrisonburg
530	Old Pittsburgh Phosphate	13.40	4.92	3.84	8.76	2.15	2.03	2.46	1.23	27	07	30	00	Joshua Walker	Baltimore	Harrisonburg
531	Moro Phillips' Soluble Bone	7.26	8.25	5.62	13.87	2.81	.....	.....	.....	24	96	23	00	Moro Phillips	Philadelphia	Harrisonburg
536	Baker & Co.'s Dissolved S. Carolina Bone	9.25	10.29	3.69	13.98	2 72	.....	.....	.....	25	16	22	00	Baker & Co	Winchester	Staunton.
459	Soluble Pacific Guano	12.13	6.56	3.11	9.67	3.41	2.21	2.68	1.13	29	47	.....		Pacific Guano Co	Mass	Blac's&Whites
434	F. C. or Farmer's Challenge Fertilizer	12.56	1.70	6.11	7.81	2.10	5.03	6.11	3.23	42	36	46	00	Charles Reid & Son	Norfolk	Norfolk.
435	F. F. or Farmer's Favorite Fertilizer	10.55	1.79	6.05	7.84	2 65	3.16	3 84	3.16	32	26	36	00	" "	Norfolk	Norfolk.
437	Soluble Fish Scraps	11.96	.44	5.35	5.79	1.05	7.03	8.53	2.09	47	02	45	00	" "	Norfolk	Norfolk.
445	Fish and Potash Guano	13.05	1.88	4.14	6.02	.95	4.46	5.42	6.12	39	85	37	50	Upshnr Guano Co	Norfolk	Norfolk.
467	Alkaline Bone	12.56	6.52	5.31	11.83	2.43	.....	.....	2.42	24	19	25	00	Read & Co	New York	Farmville.
545	Globe Fertilizer for Corn and Oats	13.55	6.07	4.75	10.32	1.71	.....	.....	2.31	22	24	26	00	Maryland Fertilizer Co	Baltimore	Staunton.
447	"Excelsior" Potato Guano	12.11	3.79	4.54	3.33	.75	6.02	7.31	8.63	54	58	55	00	Upshur Guano Co	Norfolk	Norfolk.
443	"Excelsior" Peanut Guano	9.30	1.53	4.84	6.37	.79	1.41	1.72	3.47	22	50	22	50	" "	Norfolk	Norfolk.
432	Peruvian Guano, No. 1	9.56	3.66	10.06	13.72	2.56	7.58	9.21	2.68	64	74	66	00	Hurtado & Co	New York	Norfolk.
433	Peruvian Guano, Lobos	9.65	1.01	9.86	10.87	3.77	4.82	5 86	2.06	45	47	50	00	" "	New York	Norfolk.
450	"Crescent Brand" Vegetable Fertilizer	12.46	3.32	3.25	6.57	1.01	2.94	3.57	5.97	33	26	45	00	Adams &Co	Baltimore	Portsmouth.
451	"L. & R" Ammoniated Guano	13.45	6.62	1.89	8.51	2.59	1.74	2.12	1.97	26	15	36	00	Lorents & Rittler	Baltimore	Norfolk.
443	"Lazaretto" Crop Grower	11.26	5.51	2.93	8.49	7.42	1.23	1.53	2.27	24	12	.....		G. W. Grafflin	Baltimore	Norfolk.
462	Matchless Tobacco Manure	14.25	7.23	2.52	9.75	1.15	2.44	2.97	1.68	31	44	38	00	Read & Co	New York	Farmville.
469	Good Luck Guano	14.66	6.62	3.06	9.68	2.42	2.02	2.45	1.61	29	15	40	00	G. W. Miles & Co	Milford, Ct.	Farmville.
471	Bright Leaf Fertilizer for Tobacco	12.06	7.36	1.60	8.96	2.84	2.24	2.72	4.76	32	73	33	00	Lorentz & Rittler	Baltimore	Lynchburg.

CHESS WILL GERMINATE.

[For Southern Planter.]

In the July number of your paper you question the power of the seed of cheat to germinate. I sowed some orchard grass seed about ten years ago, which I wished as a standing source for seed. There was cheat in it when I cut it, and when I sowed it the crop of grass was more cheat than orchard grass. I kept the place for seed two or three years, and each year the cheat gained on the orchard grass, till it became worthless for seed, and all the places that were seeded with this seed was more cheat than orchard grass: and from this fine start in cheat I think I can make as good a show of cheat as any one in this part of the State.

Last year I had a great deal of cheat in my wheat (Lancaster), so much so that I got new seed wheat. This year I had cheat in my wheat in two places. One, where I top-dressed a knoll with the chaff of the Lancaster wheat, which I supposed had heated enough to destroy any seed that might be in it. The other was where a bag of Lancaster wheat was sown through mistake.

There is no question in my mind that cheat has the power to reproduce itself, and that it is a hardy and prolific grass, and I should sow it if stock liked it, but they seem to reject it, though they eat it, to some extent.

The mule and mongrel duck are the only two things that I know that are not productive.

Your article has caused the seeding of some cheat. If it don't sprout I will let you know of it. Yours, &c.,

T. L. P. Cocke.

Charlottesville, July 11th, 1884.

[This shows the necessity of using clean seed for the wheat crop. The question of degeneration or transmutation is the main one.—Ed. S. P.]

MARBLED BUTTER.

A correspondent of the *Dairyman* writes: "If the butter is drained dry before the salt is added, the marbled appearance will be noticed to some extent, but if the granulated butter when put upon the worker is full of the brine used in washing it out to free from buttermilk, it will so dissolve the salt during the working that when ready to pack the objection raised will not exist. The packing would have something to do with it, I suppose, if put in well-glazed one-gallon crocks. About a pound of butter is put in each time, and most thoroughly crowded in with a wooden potalo-masher, and it comes out the crock of as solid color as one could wish. The whole trouble of marbled butter is, I opine, one of salting it too 'dry' and putting too much in the package at a time when packing."

Editorial.

EXPERIMENTS WITH FERTILIZERS ON WHEAT.

The communication of Col. Normand Smith, in this issue of the *Planter*, will prove interesting to wheat-growers. We know Col. Smith to be an intelligent farmer, who personally supervises every important operation on his farm. The experiments he reports are valuable, but the experiments of no one year can settle any important fact as to fertilization. So much depends on the difference of seasons and of soils, on the method and time of application of any given kind or quantity of fertilizer that a just conclusion cannot be drawn from any one report. He should, therefore, repeat his experiments this season, and other farmers should make their own and report results. In this way definite conclusions can be arrived at. The culture and fertilization of wheat is a subject of the greatest importance in nearly every State in the Union, not only for the crop itself, but because it is intimately connected with the grass crops which should follow it. The manures used ought to be selected and applied with reference to the best results in both crops. Chemical science and practical experience have demonstrated that phosphate of lime is an essential element in grain as well as grass, and it only remains to be shown by a rigid course of experimentation how and in what quantity this element is to be best utilized. It will not do alone, and the next most important assisting agents are the nitrates of soda, potash, etc. And here it may be remarked that the nitrates which are easily soluble should be applied broadcast to grain or grass in the Spring. The Rothamsted experiments by Sir J. B. Lawes have conclusively settled this point. On the contrary, flour of bone and finely ground phosphate rock (floats), are slow of dissolution, and require more time for action; so that when applied in proper quantity their effects are lasting. In respect to these we will suggest that this experiment be made: Say that 500 pounds are applied to an acre of wheat; let 200 pounds be applied on the surface immediately after the land is fallowed, and so left; 200 pounds more when the land is being harrowed at the time of seeding, and 100 pounds with the drill, then 100 pounds each of sodium nitrate and German potash salts broadcast on the wheat in the Spring. There are many ways in which experiments can be diversified, but there should be a sound reason for each one that may be made. To proceed at random and without an intelligent object in view, would be a waste of time, labor, and money. The best result reported by Col. Smith from stable manure may, for

the present, be accepted as apparent only. It is to be observed that whilst the increase of yield on the plot so manured was thirteen bushels over the unmanured plot, the cost of the application was about double that of the commercial fertilizers used on other plots, and that the increase of yield was about in the same proportion. His experiment, then, leaves unsettled the question whether the commercial fertilizers, if applied in increased quantity and at the same cost would not bring the same, or better, results. We, nor any farmer, will undertake to dispute the value of stable manure when applied to any crop. It is very justly the leading and most valuable manure which is produced on the farm, but it cannot be produced in such quantity as every farmer desires, and if this could be done there would be no use for chemical fertilizers. Col. Smith, residing near the city of Richmond, can procure stable manure in addition to that he raises on his farm at the cost he names, but the farmers scattered through the interior of the country cannot do it. They are, therefore, compelled to resort to commercial fertilizers, and being under this necessity they must seek for the best. They should always buy of the most responsible manufacturers and dealers who are not afraid to guarantee the purity of the ingredients used in the fertilizers they make or sell, and at the same time to disclose what these ingredients are. In doing this, the manufacturer or dealer has done his part, and for results the farmer must take the chances of his method of application—good or bad—of seasons and all other contingencies. This puts upon him the duty of cautious trial and experiment; and when, by this means, he has learned what elements of fertilization are best suited to his land and crops, he may proceed with safety for the future.

We think the farmers are now beginning to learn important lessons and new facts about commercial fertilizers. The use of highly ammoniated manures, commencing with the introduction of Peruvian Guano, has resulted in damage to the agriculture of the country amounting to many millions of dollars. The disappearance of this guano, or its price as its scarcity increased, led to manipulation for the purpose of imitation in factories established with that object; and these again led to chemical investigations which ultimately proved that too much ammonia, which acts as an unnatural stimulant, failed in good results and really damaged the land. We have now come to first principles, with the knowledge that the *phosphatic* element is the real safe basis of the best commercial fertilizers; and then with the aid of the nitrates, mainly of soda and potash, we get what may be regarded as nearly a perfect fertilizer.

FARMERS AS WRITERS AND EXECUTORS.

One of the greatest wants of agricultural papers is, that farmers should read them and write for them more; farmers who are practical, observant, painstaking, and who live on and by their farms. They are the persons to teach farming, and any agricultural journal will be fortunate which can induce its readers to become writers for it. It is thus that important and real facts and experiences can be embodied for the benefit of all, and disputed or doubtful questions discussed and definitely settled. The mere theorists, whose writings and arguments may be attractive and plausible, will be driven from the field by the stubborn and ascertained facts which are the mental property of the practical man. It must be admitted at the same time, that every farmer is not a practical man when success is the test to be applied. Every thinking man is to some extent a theorist. His mind must plan whilst his hands, or the hands of others whom he directs, must execute; and his success will depend on the harmony which shall exist between his planing and his execution. Well devised plans and theories may be, and are often, of no practical value by reason of faulty *execution*, so that this word is the *foundation stone* on which the best arranged plans are to rest. No business is sure without it. The most simple, as well as the most elaborate mechanism invented by the mind of man depends for practical and valuable use on the skill and fidelity of the constructing mechanics. The men of commerce and trade, without a proper system of accounts and correspondence, as the means of executing their business, would soon become bankrupts; a lawyer depends for success on the management of his case, and his skill in the application of the general principles and special enactments of law; the physician, if true in his diagnosis, will fail to cure his patient if he mistakes in his remedies, or is careless in their administration; the minister of the gospel will be fruitless in his ministrations if he relies too much on abstruse doctrines, eloquently preached, and neglects the simple truths of revealed religion; and like all these the farmer must be a thorough executor of his work. Nothing slip-shod is admissable in one who desires to be progressive and successful in his farming. The first lesson to be learned is that which teaches that his occupation is not menial, or subordinate in respect to intelligence and high culture to any other. He must not regard it as one of mere physical labor, which calls for no mental effort, and justifies him in following the beaten paths of his forefathers. He has a larger and broader field to occupy. The sciences to a great extent minister to his wants, and it is best that he should know something of them. Chemistry, geology, botany, mathematics,

mechanics and architecture have each many practical applications to the business of agriculture. Why, then, should it have a lower standard of intelligence than other professions? Farmers' boys should be educated in these sciences, and when farmers, or their children, have not been so educated, much can be learned by agricultural reading. Writing then follows as a mental exercise, which is valuable whether what is written ever reaches the printer's desk or not. But in this matter (writing for the agricultural press), farmers should never be too modest, or attempt to excuse their modesty under any pretext. All should feel it a duty to communicate with each other, and there are no better channels than through the agricultural journals which they support and read. Facts, sustained by experiment and observation, in respect to the culture of general and special crops, the application and effect of manures, rotation, harvesting, drainage, &c., are always valuable. To these may be added the management and profits of live stock, poultry, dairy results, orchards, small fruits, vegetables, household economy, and many other topics which will furnish subjects for written communications, which will always be read with interest, and in most cases with profit, because they come from practical men or women.

The excuse we most often hear given by farmers when asked to communicate their views on any agricultural topic is, that they are not in the habit of writing for the papers, and that it is more agreeable to read what others write than to attempt to write themselves. This is a grave error, for if all were to act on this principle there would be nothing valuable in agricultural journals, and they might as well cease to exist. The principle, too, will not bear the test of moral obligation, for he who receives ought to be willing to give. Again, some seem to fear that what they may write will appear simple, or even foolish, in print. In such an idea they do themselves injustice, for no valuable fact or experiment in any of the varied operations of a farm will fail to impress the minds of other farmers, however simple and plain the language may be in which it is communicated, but its value will be increased by the simplicity and plainness of the language employed. Studied and high-wrought diction is rather to be avoided than desired in writing on every subject, and certainly on the practical matters of the farm. Other farmers excuse themselves on the plea that they have not the time to spare; but this is not a fair excuse if they will properly consider it. Indeed, there is no way of escape from those mutual obligations which exist among all classes of men, and there is no greater obligation or necessity among farmers than that they should teach and learn of each other.

The Southern Planter.

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EDITORIAL NOTES

COL. HARRISON AND DARNEL.

A communication from Col. Harrison, Commissioner of Agriculture, appears in our present issue, attacking our belief in the degeneration, or transmutation, of wheat and Winter oats into chess, or what he terms *darnel*. We appended a note to his article, but since then it occurred to us that the files of the *Southern Planter*, in years gone by, might contain something on the subject. Our search has disclosed a number of interesting communications on the question, and we shall now present extracts of a few of the many which agree with us. It is due to frankness and truth to say that there are others which are grounded on the so-called *scientific theory* that all seeds produce their like, and so ignore the idea of degeneration or transmutation. We have the greatest respect for, and confidence in, true science—as much as any college graduate can have—but do not admit that a *true scientist* can sit behind his spectacles and denounce as ignorant superstitions the observations and experiences of a majority of farmers on this subject. It would be better that such a bold investigator as *Darwin* should grapple the subject, even if the result at first was not more acceptable than that man is evolved from a monkey or wheat from a water-lily. The extracts referred to are now given:

A Montgomery county, Va., farmer, in *American Farmer*, Baltimore, in 1847, and copied in the *Southern Planter*, says; "I had sown a ten-acre field with very clean seed, but late in the Spring a storm prostrated a portion of the fencing, and before it was discovered about a half acre was bitten down by stock. When harvest arrived it was observed that on this part there was quite a full crop of cheat, and but a small quantity, if any, on the adjoining land where the wheat was uninjured. I was told that such was the effect of injury to wheat at that stage of its growth."

—

W. H., of Halifax, Va., writes in the June number (1850) of the *Southern Planter*: "I made an observation yesterday which satisfies me beyond all doubt that wheat *will produce darnel*. When I finished getting out my wheat last Fall, I discovered that grains of wheat were thickly impressed upon the surface of the yard. In this condition it was left, and soon afterwards an abundant crop of wheat sprang up thickly all over it. In passing the yard yesterday I discovered that this crop had headed, and that *every stalk was darnel*. Though entirely satisfied myself that it was the offspring of wheat, I determined to make a further examination, and on pulling up many bunches of it I discovered, upon separating the stalks (which were very thick), that to each stalk, near its junction with the root, was attached *the hull of a wheat grain*, retaining its form and appearance so completely as to leave no doubt of its identity. This is conclusive to show that wheat will produce chess or darnel. What causes the transmutation, and what will prevent it, are enquiries of far more importance. It may be that chess will also produce its kind. By placing the grains in cotton in a vessel of water, I have ascertained that they will *sprout*. In the instance in which I tried it the sprouts grew to the height of six or eight inches, but being neglected, perished."

—

"*Mr. Editor*,—Several facts have come to my knowledge respecting the transmutation of wheat into cheat, which will be interesting to some of the readers of the *Planter*. Some years since, Dr. F. Bates

picked twelve grains of wheat from some straw used in packing a crate, and sowed them in a drill in his garden; the fowls had access to the garden during the Winter and kept the wheat down until late in the Spring. The Doctor then worked the wheat and it grew and promised a fine crop. The garden gate having been left open one day, the Doctor's riding horse got in and bit down the wheat late in the season; the consequence was that the twelve grains of wheat produced eleven bunches of chess and one of wheat."—*C——, Hanover Co., Va., 28th Sept.*, 1849.

"Cheat is no hybrid, but a degenerated plant. We may plant vines of different species together and produce a hybrid which will propagate its species; so we have the law of nature on our side, and it matters not if men of scientific attainments do call the oak *quercus*, wheat *triticum*, and cheat *bromus*. * * * Again, I gave an instance of wheat being sowed and a part of it not plowed in, which turned to cheat; and I am told 'the land was well set previously with it.' Why did it not spring up on the balance of the land where it was neither plowed or sowed? Did throwing wheat on the ground make the previous *well set* seeds of chess spring up?"—*B——, Charlotte Co., 5th Feb.*, 1849.

PERSONAL.

The *Charlotte Gazette*, in noticing the *Southern Planter* for July, uses this expression: "If all farmers could do as well as Col. Knight writes, we should have splendid crops in Virginia." Now we hope our brother Cox did not print these words in a spirit of irony. We should be much better pleased if we could think that our writing had always been as good as our farming; and yet good writing and good farming do not always go together. There have been notable examples of good agricultural writers who were very poor farmers, and might well say, "do not as we do, but do as we tell you." This difference between precept and practice is well understood, and we should dislike to be classed with those who can teach and not perform. From this class has arisen much of the prejudice against what is termed "book-farming." The average farmer would feel it to be to his interest to subscribe to and read agricultural papers if he had confidence in their teachings. An agricultural editor should therefore be able to practice what he teaches, or if he has retired from the farm, as we have done, he can build on a foundation which is as sure and solid as his practical experience has been varied and well tested.

Another Farmers' Club in Henrico.—We are pleased to learn that a new *Farmers' Club* has been formed in Henrico county. At a meeting held at the County Court House on the 12th of July, after organizing, a committee was appointed to draft a constitution and by-laws, which consists of Gen. G. W. Randall, Col. Normand Smith, and Dr. Hugh Smith. Their report was to be made to an adjourned meeting at the same place on 20th July. It was decided that only farmers actually engaged in farming operations would be admitted to membership.

Now we hope this example will be followed by farmers in other counties. For security and protection there is nothing like organization in any business, and, at the same time, there is nothing more instructive than a free interchange of ideas on the practical operations of the farm, which is the result of such organizations.

The LeConte Pear.—We have received from J. T. Chastain, Esq., of Thomasville, Ga., a box of these pears. The readers of the *Planter* will remember the interesting communication of Mr. Chastain which was published in our June issue, giving the origin and characteristics of this pear. The fruit is most excellent in appearance (being yet not sufficiently mellow to be eaten). We are inclined to the opinion that it will lead all other pears of its class in this country. Read Mr. C.'s article again. The pears were received on the 14th July, which gives evidence of early maturity in South Georgia, but we suppose they would be a month later in Virginia.

The Virginia State Poultry, Pigeon, and Pet Stock Association has been organized with M. B. Rowe, of Fredericksburg, as President; W. H. Pendleton,

Cuckoo, H. T. Ellyson and J. H. Cringham, Richmond, Vice-Presidents; Frank Lovelock, Gordonsville, Secretary; and Geo. R. Hill, Alexandria, Treasurer.

FIGURING.

1. Nnmber of subscription bills sent ont with the July issne for arrearages ranging from one to twelve months. 1,158
2. Remittances since made. 97
3. Bills still out in the hands of subscribers. 1,061

We hope our subscribers will help us to balance this account. The *Planter* owes no man a cent, but it would be better off and able to increase its usefulness if those who owe it wonld pay up.

BOOKS, MAGAZINES, Etc.

Myra: A novel by Mamie Lamkin Hatchett. J. W. Randolph & English, publishers, Richmond, Va. Pp. 249. Octavo. Price, $1 in stiff paper, $1.25 in cloth.

We have read this thrilling story with especial interest. The anthor and her esteemed parents are personally known by us, and they are Virginians and the story is Virginian. We confess to some distrust when we heard that a lady so young had such a work in press; and now our pleasure is, that she has accomplished it with so mnch credit. The plot is well conceived, the characters are well sustained, and the incidents will carry the interest and attention of the reader without flagging to the end. The critical reader will find some faults, but they are so few that they will pass unnoticed by the general reader. All will acknowledge that this first effort at anthorship has signal merit, and opens a bright future to the anthor if she perseveres in her work. The publishers have done their part well in respect to typography and every element of book-making, and this is Virginian work also.

Woodbourne: A novel of the Revolutionary Period in Virginia and Maryland, in two parts. By Col. Joseph Mayo. Published by J. B. Piet & Co., Baltimore, Md. Price $1 per volume.

We have received from the publishers the first volume of this story, but have refrained from a close reading of it until we get the second. Whilst the author will present to his readers a story which will be graphic in the portraiture of character appropriate to the times, interlaced with scenes and incidents which will facinate, yet his main object is visible in the vindication of the high character of the *Cavaliers* who were the early settlers of the Colony of Virginia. The writings of Mr. Thackaray have made such a vindication proper, probably not more in *old* England than *new* England. The *Puritans* of Plymouth Rock never had a proper appreciation of the *Cavaliers* of Virginia, and it may be that Col. Mayo's book will be as much needed at home as abroad, so far as it is intended to correct improper impressions in regard to the first settlers of Virginia.

Wild Wood Life; A Trip to Parmachenee. By Capt. C. A. J. Farrar, author of "Eastward Ho!" etc. Boston: Lee & Shepard, publishers. New York: Chas. T. Dillingham. 1884. Price $1.25.

We get this book also through Messrs. Randolph & English, of this city. It is beautifully bound in cloth, and contains 408 pages, with a number of illustrations of hunting and wood-land scenes. The style is pure and forcible in expression, and the book is an embodiment of all that can be well conceived of "wild-wood life." It will be read with intense interest by all who can admire skill and bravery in adventurous people. It is made more attractive from the fact that its heroes are six youths from Boston and New York, who spend a Summer, camping, hunting and fishing in the wild woods of Maine.

Whirlwinds, Cyclones, and Tornadoes. By Wm. Morris Davis, of Harvard College. Lee & Shepard, Publishers, Boston. Price in cloth, 50 cents.

This little book comes to us through Messrs. J. W. Randolph & English, of this city. It is really a very interesting and readable work, in which the subject is scientifically treated. Now that our country is so often visited by destructive tornadoes and cyclones, the popular mind becomes

inquisitive as to their origin and all the phenomena connected with them.

PLANTING AND GENERAL AGRICULTURAL PROSPECTS OF CEYLON. An Address by JNO. FERGUSON, Esq., Editor of the *Tropical Agriculturist.*

We thank our brother Ferguson for his interesting address, as also for the minutes of a meeting in London, Eng., in May, of the English Missionary Society, which he was called on to address, being then on his way in a trip around the world. In this travel he called on us in April last, and we shall never forget him. His geniality and intelligence won us completely; and when, on his embarkation at New York for his eastern home, he sent as tokens of remembrance to our daughter a beautiful specimen of eastern hand-worked lace, and to us a tortoise-shell paper cutter, our *bonds* were made perfect. But the *Planter* and *Agriculturist*, which will meet midway the ocean each month, will be messengers of love and friendship.

THE MILLER MANUAL LABOR SCHOOL of Albemarle county; Its History, Laws, Methods, and its Catalogue for 1884.

We have rarely received a pamphlet of more interest than this. This school is, indeed, a noble charity, which for all time will provide a technical and liberal education for the youths of Albemarle county. It has an invested and interest-bearing fund amounting to $1,385,953, with a cash balance in hand on January 1st, 1884, of $146,735.76. In a list of twenty-six pupils who have completed their education and chosen their vocations in life, we see farmers, machinists, carpenters, bricklayers, cabinetmakers, engineers, and teachers. It is a rule that no pupil shall remain, except for special reasons, after he is eighteen years old, and it is wonderful to see what amount of technical learning they acquire before this age. We noticed at our last State Fair a steam engine, beautiful suits of furniture, and other articles made by the boys of this school; and this year, by request of Superintendent Vawter, special premiums are offered for the best steam engine and the best suits of parlor and chamber furniture, which will be competed for by this school, with the competition open to all other manufacturers of the State.

IN WAR TIME; or, Two Years in the Confederacy and Two North.

This is the title of a series of papers now being published in the *Progress*, of Philadelphia, by E. G. Booth, Esq. They will be read with interest by Mr. Booth's numerous friends in Virginia.

Young Folks' Library, No. 2, for June, 1884. Price, 25 cents per number, or $3 per annum. D. Lathrop & Co., publishers, Boston, Mass. This number contains the story of "Maggie's Mission," pp. 404, and furnishes entertaining and instructive reading for boys and girls.

The North American Review for July is a number of unusual merit. We note in its contents, and have read, "Future of the Negro," by Senator Z. B. Vance, Fred. Douglas, Senator J. T. Morgan, Gen. S. C. Armstrong, and others; the "Trial by Jury," by Judge R. C. Pitman; "Marriage and Divorce," by Judge Noah Davis, and other valuable papers.

Popular Science Monthly for July contains many very valuable papers. We can only specify, "Diseases of Plants," "The Prevention of Hydrophobia," "Our Debt to Insects," "Colorado for Invalids," "Adaptation to Climate." D. Appleton & Co., publishers, New York. Yearly subscription, $5, single numbers 50 cents.

Circular to Farmers of Virginia. By Dr. J. R. Page, of the University. This circular calls for a meeting of farmers at Charlottesville on the *second Thursday in August* for the purpose of organization. In our issue for June Dr. Page's plan of organization was given, as well as our own views on the subject. We hope there will be a full attendance.

Godey's Lady's Book for August reaches us before we go to press. It is a deservedly

popular magazine, especially with the ladies. Published at Philadelphia. Price $2 per annum, or may be clubbed with the *Planter* to new subscribers, or old, paying in advance at time the club is ordered, at $2.55.

Harper's Monthly for August comes to us before we go to press. It is filled with an unusual amount of interesting matter. Its illustrations are rich and numerous, but we specify, in part, "Salt Lake City," "Needlework Designs," "Antelope Hunting in Montana," &c., &c. In addition to these will be found a paper on "The Gateway of Boston," fully illustrated. Its unillustrated articles are also deserving of attention.

Address Harper Brothers, New York, for their *Monthly*, *Weekly*, *Bazar* and *Young People*. No magazines published in this or any other country exel them.

The Century for July is rich in its illustrations as well as matter. There is a remarkable paper purporting to be a history of the "Ku Klux Klan," by the Rev. D. L. Wilson, of Tennessee. The fiction stories are especially entertaining, and, in fact, everything in the number.

St. Nicholas for the same month is also rich in illustrations and otherwise very meritorious. Both published by the *Century Company*, New York.

Descriptive Catalogue of Fruit and Ornamental Trees and Plants of Randolph Peters, Wilmington, Delaware.

Summer and Fall of 1884.—Pamphlet of pot-grown and larger strawberry plants, with instructions for cultivation. J. T. Lovett, Monmouth Nursery, Litt'e Silver, New Jersey.

Catalogue of Roanoke College for 1883–'84. This College is located at Salem, Va., and has now passed its thirty-first session. It has a corps of twelve professors, with a liberal course of instruction.

Catalogue of the University of Virginia, 1883–'84. The total attendance for this, its sixtieth session, was 298, of which 141 were in the Law and Medical Departments and 10 in the Agricultural. How long will it be before farmers will think better of their own profession and *educate* their sons therein?

Catalogue of the Agricultural and Mechanical College of Virginia, at Blacksburg, for Session of 1883–'84. Our views in regard to this college are embodied in a communication in this issue of the *Planter*, from the pen of a friend who attended the commencement exercises in July.

Catalogue of the Gordonsville Female Seminary, Session of 1883–'84. This college is presided over by the Rev. J. Wade Shelburne, assisted by a corps of nine teachers. We have read much in commendation of this college, and we doubt not it justly deserves all that is said of it. Its location in the beautiful and healthy Piedmont section of the State presents a good reason why parents and guardians should patronize it. It has a liberal course of study, and a novel and good feature is a *college paper*, published monthly, and conducted by an elected editorial staff from teachers and pupils. We have a copy of this publication for May, the merits of which will ensure it a good place in the roll of journalism. Send for catalogue, and see advertisement in our present issue.

Catalogue of the *Norfolk Female College*. This is one of the neatest and most comprehensive scholastic catalogues we have received. It opens with an engraving of the beautiful grounds and buildings. Its curriculum is well chosen, and its efficient staff of teachers make it worthy of patronage. Its location on the beautiful harbor of the State, with a mild and healthy climate, should commend it to parents having daughters to educate, and especially those who reside in the northern section of the Union. This suggestion is well supported by the fact that the Hygeia Hotel, near by, is filled nearly the entire year by people from the North.

NEW ADVERTISEMENTS.

Fourqurean, Price, Temple & Co.—The advertisement, commencing with our present issue, affords us the opportunity to speak of this enterprising firm. Its business is conducted in one of the largest and best arranged buildings on Broad street, numbered 429 east Broad, and 206 north Fifth streets. The firm commenced its business about four years ago, but the older members were identified with the dry-goods trade before the war, and have been leaders in it ever since; and now their establishment can with pride be pointed to as a prominent one in the progress of the business interests of our city. The large space devoted to its work (about 25,000 square feet), and the thirty-five or forty experienced men and ladies who attend the customers, bear evidence of the vigor and enterprise of its members, who are J. M. Fouqueran, E. D. Price, J. Temple, W. B. Courtney, and J. Harvie Blair. Its *order system by sample* strikes us as being one of great convenience, whereby persons in distant parts of the country can get their wants supplied as well, if not better, than if they made their selections at the counters.

Joseph Reall, 32 Park Row, New York city, advertises the De Laval Jersey Herd, and offers registered Jersey bulls of the best breeding, of ages ranging from three months to three years, at prices within the reach of every farmer, and of strains of blood that will suit the most fastidious breeder. Those wishing bulls to head their herds, or to improve strains of blood, and farmers who desire to raise the value of native or other stock by a cross with the Jersey, will find this an excellent opportunity. Females of all ages are also offered.

Randolph Peters, Wilmington, Del., advertises his garden seeds and nursery stock. We have so often noticed the catalogues and the stock of this reliable nurseryman that nothing further need be said.

H. Post, Postburg, Dallas county, Ala., advertises the seed of *Johnson Grass*. We have often had occasion to speak of this grass in the *Planter*. It is a good forage crop for the Southern States, and is a *perenial* there, but how far north it is so is yet to be seen. If no farther north than the Carolinas, it has a large field for usefulness. Send for the circulars of Mr. Post for detailed information as to management, &c.

Atlantic and Virginia Fertiltng Company.—The head of this company, W. G. Crenshaw, Esq., is one of our oldest associates in the State Agricultural Society, and one who has always manifested the deepest interest in the agricultural improvement of Virginia and other Southern States. His fertilizers we cannot speak of from personal experience, as they have appeared on the market since we have been resident in the city. His intelligence, high character, practical knowledge of all the operations of a farm, and the numerous commendations his fertilizers have received, warrant us in commending them to the attention of our farmers.

The Gordonsville Female College renews its advertisements. See our notice under head of *Catalogues*.

J. L. Campbell, West Elizabeth, Pa., renews his advertisement of *Incubators*. The subject of artificial incubation is increasing in interest, and we would advise all enquirers on the subject to correspond with Mr. Campbell.

Norfolk College for Young Ladies.—We have noticed this institution under the head of catalogues, which see as well as their advertisement.

Southern Fertilizing Company advertises for its fall trade a line of fertilizers to meet "every shade of demand." The reputation of this company, and its skill and fidelity in the preparation of its goods, are too well known to need any commendation from us.

Virginia Agricultural and Mechanical College.—See notice of Catalogue, and the article in the body of this issue of the *Planter* signed "*Visitor*."

W. W. Bently, Weldon, Pulaski county, Va., advertises a stock sale of Shorthorn cattle, Southdown and Oxforddown sheep. He is one of the best breeders in the State, and his location is a guaranty of the condition of his stock; and as regards pedigree and the individual excellence of the animals offered, there need be no doubt.

Richmond College advertises the opening of its next scholastic year. No commendation is needed. It lives in the hearts of the people.

J. M. Blair, family grocer, Pace Block, is a leader in his line. He keeps everything, it would seem, and his store is a beautiful bazar.

B. S. Williams & Co., Kalamazoo, Mich-

igan, advertise their *Wind Engines* through *Ayer & Son*, of Philadelphia.

T. W. Wood is our well known seedsman, who raises the most of his seeds. He is intelligent, and knows his business.

M. T. Phillips, upholsterer and paperhanger, has been in business in Richmond forty years, and is worthy of all confidence. Give him a call.

Gregory & Simpson, commission merchants, Cary street, Richmond. It gives us pleasure to call attention to the advertisement of this firm. The senior, Mr. Gregory, we have known for many years. We were born and raised in adjoining counties, and there is no man of higher integrity, and none who better understands the interests of farmers, and will more faithfully represent them. His partner, Mr. Simpson, we have not known so well, but he is a good business man and stands high in the community.

THE NEWARK MACHINE CO. WILL ARISE AT ONCE FROM ITS ASHES.—The Newark Machine Co., of Newark, O., whose factory burned on Saturday morning, July 5th, consumed a large number of *Clover Hullers, Grain Drills, Rakes, Monarch Fans, &c.* A large force of men are now at work building *Clover Hullers, Grain Drills, &c.* They are getting out material at the B. and O. Shops at Zanesville, and John H. Thomas & Sons, Springfield, who have kindly tendered them their factories, at which places they are getting out woodwork for *Clover Hullers, &c.*, and expect to have some on the market by August 1st. They have received many letters and telegrams from different manufacturers throughout the U. S., offering them aid in any way. The firms that have heretofore supplied them with raw material, have telegraphed them offering anything they may have that could be used in the construction of their implements at low prices and long credits. Their insurance is about $250,000, distributed among 61 first-class companies in this country and Europe, and the adjusters are now there and at work and expect to finish the whole thing soon. The company has commenced building one shop 225 by 40 feet, 2 stories high, and 300 feet of shedding to be used for work shop and paint room, and they expect to be ready after August 1st to fill any orders in their line of goods.

The *Texas Siftings*, price $2.50, and *Southern Planter*, price $1.25, are furnished together for one year at $2.80, and in addition the *Siftings* contributes to each joint subscriber ten novels of the best authors in *Sea-Side* editions.

CLUBBING.

Wishing to extend the circulation of the *Planter* until every farmer in Virginia reads it, and a very large number in other States shall do the same, we offer the following clubbing rates, with a free copy to the person who gets up a club:

Five copies,	one year, for	$ 5.00
Ten copies,	"	9.00
Fifteen copies,	"	12.00
Twenty copies,	"	14.00
Twenty-five copies,	"	15.00

We especially call the attention of all *Farmers' Clubs* to this offer, inviting them at the same time to make the *Planter* the medium for communicating all valuable facts and experiences which may be gained in their respective associations.

DYSPEPSIA.

Sedentary habits, mental worry, nervous excitement, excess or imprudence in eating or drinking, and various other causes, induce Constipation followed by general derangement of the liver, kidneys, and stomach, in which the disorder of each organ increases the infirmity of the others.

The immediate results are Loss of Appetite, Nausea, Foul Breath, Heartburn, Flatulence, Dizziness, Sick Headaches, failure of physical and mental vigor, distressing sense of weight and fullness in the stomach, and increased Costiveness, all of which are known under one head as **Dyspepsia.**

In every instance where this disease does not originate from scrofulous taint in the blood, AYER'S PILLS may be confidently relied upon to effect a cure. Those cases not amenable to the curative influence of AYER'S PILLS alone will certainly yield if the PILLS are aided by the powerful blood-purifying properties of AYER'S SARSAPARILLA.

Dyspeptics should know that the longer treatment of their malady is postponed, the more difficult of cure it becomes.

Ayer's Pills

Never fail to relieve the bowels and promote their healthful and regular action, and thus cure **Dyspepsia.** Temporary palliatives all do permanent harm. The fitful activity into which the enfeebled stomach is spurred by "bitters," and alcoholic stimulants, is inevitably followed by reaction that leaves the organ weaker than before.

"**Costiveness,** induced by my sedentary habits of life, became chronic; AYER'S PILLS afforded me speedy relief. Their occasional use has since kept me all right." HERMANN BRINGHOFF, *Newark, N. J.*

"I was induced to try AYER'S PILLS as a remedy for **Indigestion, Constipation,** and **Headache,** from which I had long been a sufferer. I found their action easy, and obtained prompt relief. They have benefited me more than all the medicines ever before tried." M.V. WATSON, *152 State St., Chicago, Ill.*

"They have entirely corrected the costive habit, and vastly improved my general health." REV. FRANCIS B. HARLOWE, *Atlanta, Ga.*

"The most effective and the easiest physic I have ever found. One dose will quickly move my bowels and free my head from pain." W. L PAGE, *Richmond, Va.*

"A sufferer from **Liver Complaint, Dyspepsia,** and **Neuralgia** for the last twenty years, AYER'S PILLS have benefited me more than any medicine I have ever taken." P. R. ROGERS, *Needmore, Brown Co., Ind.*

"For **Dyspepsia** they are invaluable." J. T. HAYES, *Mexia, Texas.*

AYER'S PILLS,

PREPARED BY

Dr. J. C. Ayer & Co., Lowell, Mass.

Sold by all Druggists

THE BEST

Hair restorative in the world is HALL'S HAIR RENEWER. It cures all diseases of the scalp, and stimulates the hair glands to healthful action. It stops the falling of the hair; prevents its turning gray; cures baldness, and restores youthful color and freshness of appearance to heads already white with age. The following are a few illustrations of what is done by

HALL'S

Vegetable Sicilian

HAIR RENEWER:

☞ MRS. HUNSBERRY, *344 Franklin Ave., Brooklyn, N.* Y., after a severe attack of Erysipelas in the head, found her hair—already gray—falling off so rapidly that she soon became quite bald. One bottle of HALL'S HAIR RENEWER brought it back as soft, brown and thick as when she was a girl.

☞ MR. KESLING, an old farmer, near *Warsaw, Ind.*, had scarcely any hair left, and what little there was of it had become nearly white. One bottle of HALL'S HAIR RENEWER stopped its falling out, and gave him a thick, luxuriant head of hair, as brown and fresh as he ever had.

☞ MRS. A. T. WALL, *Greenfield, Cheshire, Eng.*, writes: "I have found the greatest benefit from the use of HALL'S HAIR RENEWER, it having restored my hair, which was rapilv falling off, and returned its original color."

☞ DR. EMIL SEIP, *Detroit, Mich.*, certifies that "HALL'S HAIR RENEWER is excellent for hair growing, and gives back the natural color to faded and gray hair."

☞ MRS. S. E. ELLIOTT, *Glenville, W. Va.*, says: "One bottle of HALL'S HAIR RENEWER restored my hair to its natural, youthful color."

No injurious substances enter into the composition of HALL'S HAIR RENEWER, and it is not a dye. Its vegetable ingredients render it in the highest degree beneficial to the scalp as a preventive of disease. Its effects are natural and lasting, and it does not make the hair dry and brashy, like the so-called restoratives compounded with alcohol.

Buckingham's Dye

FOR THE

WHISKERS

Is, in four respects, superior to all others.

1st—It will produce a rich, **natural** color, brown or black, as desired.

2d—The color so produced is permanent, cannot be washed off, and will not soil anything with which it comes in contact.

3d—It is a single preparation, and more convenient of application than any other hair or whisker dye.

4th—It contains no delcterious ingredients, as do many preparations offered for like use.

PREPARED BY

R. P. HALL & CO., Nashua, N. H.

Sold by all dealers in medicines.

POULTRY.

The *Planter* has not heretofore been able to devote the space and attention to an important domestic interest which it deserves. To meet the growing demand for thoroughbred poultry and all the best information in regard to its management, we have arranged with the proprietors of the *Poultry World*, of Hartford, Conn., to supply the readers of the *Planter* with their new monthly publication, known as the *Poultry Post.*

We therefore propose to send to each *new* subscriber the *Planter* and the *Ponltry Post* for one year for the sum of $1.50, payment to be made in advance; and for the same price will send both papers to all the existing snbscribers of the *Planter* who are not in arrear, and will pay in advance for one year. Their accounts may be settled, and then the advance payment made.

Address,

SOUTHERN PLANTER.

I respectfully solicit consignments of

GRAIN and all kinds of **COUNTRY PRODUCE,**

Which will be PROMPTLY SOLD at the

HIGHEST MARKET VALUE.

Your orders are also requested for

STAPLE & FANCY GROCERIES,
Teas, Wines and Liquors.

Only PURE Goods are sold, and at the

VERY LOWEST PRICES.

Samples and Prices furnished upon application. Correspondence solicited.

Joseph M. Blair,

803 Main St. (Pace Block),

Richmond, Va.

E. J. GREGORY, *Late E. J. Gregory & Co.*
E. H. SIMPSON, *Late Ins. Pub. Warehouse.*

Gregory & Simpson,

(Successors to E. J. Gregory & Co.)

GENERAL COMMISSION MERCHANTS,

1206 Cary St., Richmond, Va.

Prompt personal attention given to all prodnce consigned to us.

LEAF TOBACCO, COTTON and GRAIN—Specialties.

☞ *Liberal Advances made on Consign*ments in hand. au3t

CHESAPEAKE AND OHIO RAILWAY

—FROM—

CINCINNATI, LOUISVILLE and COLUMBUS, OHIO,

—TO—

CLIFTON FORGE, STAUNTON, CHARLOTTESVILLE, and RICHMOND, VA.

LAND BUYERS and parties from the West and Northwest, who are looking for New Homes in the mild climate of Virginia and the Carolinas, will find the

Chesapeake and Ohio Railway

the only direct route to Virginia.

Call on Agents of the Seneca Route, Chicago, Rock Island and Pacific.

J. H. MARTIN, General Agent, Indianapolis, Ind.

Or following Agents of C. and O. Ry.:

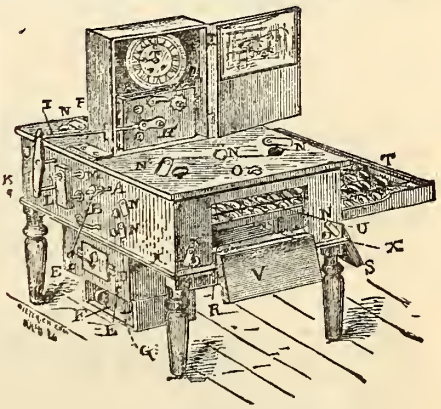
W. P. FOSTER, 108 N. Third Street, St. Louis, Mo.

FRANK W. BUSKIRK, 171 Walnut St., Cincinnati, O.

J. J. ARCHER, Gen. Pass. Agent, Scioto Valley Railway, Columbus, O.

H W. FULLER,
General Passenger Agent.

C. W. SMITH,
au.tf. General Manager, Richmond, Va.



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Is the Standard Incubator the world over. Made by J. L. CAMPBELL, West Elizabeth, Allegheny Co., Penn. auly

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FINELY BRED REGISTERED

JERSEY BULLS

Of BEST STRAINS,

From Three Months to Three Years Old, at reasonable prices. **De Laval Jersey Herd,** (Near Newark)

au2t **Glen Ridge, N. J.**

F. STEARNS' No. 1 WHEAT FERTILIZER.

To the Farmers of Virginia:

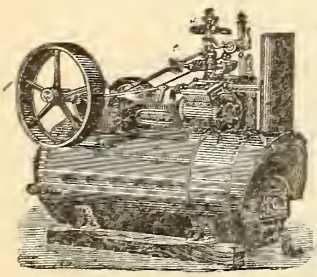
We continue the manufacture of this superior Fertilizer, for the reason that those who have used it continue to send their orders. Our formula is—

1200	pounds	Pure Bone Meal, dissolved.
400	"	Ground Fish.
100	"	Muriate Potash, 80 per cent.
100	"	Ground Plaster.
2000	pounds.	

These materials are purchased by us in their raw state, and ground and mixed by ourselves—their combination being known to be perfectly free from all adulterations.

We can confidently recommend this fertilizer as peculiarly adapted to all *Fall crops, particularly wheat and grass*, not only as entering into and forcing the growing crops, but leaving a large residuum of Bone Phosphate, than which there is no better permanent manure for the land. Price of the fertilizer, $40 per ton; Price of pure Bone Meal, $38 per ton, and Germnan Kainit at $13.50 per ton. Delivered on board cars in Richmond.

jy 3t STEARNS & HALSEY, 15 south 15th street.



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UPRIGHT ENGINES: 3 Horse, 4½ Horse, 6½ Horse and 8½ Horse Power. Safe, Simple and Durable. Over 3,000 in successful operation.

New Style 10 H. P. Horizontal Engine.

Center Crank Engine. All wrought iron Return Flue Boiler. Compact, Substantial and handsomely finished. Illustrated Pamphlet sent free. Address

JAMES LEFFEL & CO.,
SPRINGFIELD, OHIO.
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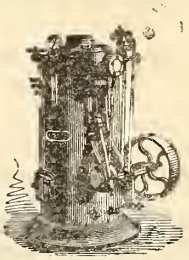

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FRUIT AND VEGETABLE EVAPORATOR

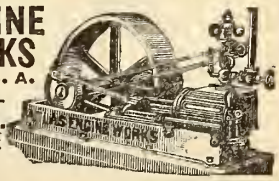
Made of Galvanized Iron. **FIVE SIZES** **15,000 SOLD.** **Economical, Durable** and **Fire Proof.** Will pay for itself in 30 days use, out of sale of its own products. **FREE!** Our Illustrated Catalogue and Treatise. Address, **ZIMMERMAN M'F'G CO., Cincinnati, O. or Burlington, Iowa.**

jy 2t

Send for Catalogue and Prices.

ATLAS ENGINE WORKS

INDIANAPOLIS, IND., U. S. A.
MANUFACTURERS OF
STEAM ENGINES & BOILERS.
Carry Engines and Boilers in Stock for immediate delivery.



jy 12t

Address, TAYLOR MFG. CO.,
(Please Mention this Paper.) **Chambersburg, Pa.**

$50 REWARD

will be paid for any **Grain Fan** of same size that can clean and bag as much Grain or Seed in one day as our **Patent MONARCH Grain and Seed Separator** and **Bagger**, which we offer to the public at a low price. **Send for circular and price list,** which will be mailed FREE.

NEWARK MACHINE CO.,
Newark, Ohio, U. S. A.

au

ASHLEY PHOSPHATE CO.

——::CHARLESTON, S. C.::——

FLOATS AND KAINIT MIXTURE of best materials, thoroughly mixed by machinery, containing Bone Phosphate, 25 to 30 per cent.; Sulph. Potash, 12 to 14 per cent., besides Magnesia and Soda and Lime, &c.

SOLUBLE GUANO— ... ... Highly Ammoniated.

DISSOLVED BONE— ... ... Very High Grade.

ACID PHOSPHATE— ... ... For Composting.

ASH ELEMENT— ... ... For Cotton, Wheat, Peas, &c.

FLOATS—Phosphate Rock, reduced to an Impalpable Powder by the Duc Atomizer, of Highest Grade. SAMPLE sent on application.

SMALL-GRAIN SPECIFIC—Rich in Ammonia, Phosphoric Acid, Potash, Magnesia and Soda.

GENUINE LEOPOLDSHALL KAINIT.

The above FERTILIZERS are of very high grade, as shown by the *Official Reports* of North Carolina, South Carolina and Georgia.

For Terms, Hand-Books, Agricultural Primers, and good Articles on Floats, Peas and Ash Element, Kainit, &c., address the

ASHLEY PHOSPHATE COMPANY,

N. B.—Special inducements for Cash Orders. Special Formulas made carefully to order of best materials. [ja 1y]

ESTABLISHED IN 1870.

STONO-PHOSPHATE COMPANY,

CHARLESTON, S. C.

WE OFFER TO THE PLANTERS]

SOUTH CAROLINA PHOSPHATE ROCK

GROUND TO A POWDER AS *FINE AS WHEAT FLOUR*—

"PHOSPHATE FLOATS,"

FOR APPLICATION TO

GRAIN, GRASSES, AND FOR COMPOSTING.

The Rock is subjected to FREQUENT ANALYSIS by the Company's Chemist and is of the BEST QUALITY.

For TERMS, etc., address the Company.

SAMPLE sent by mail upon application.

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JOHNSON GRASS,
(*Sorghum Halapense.*)

THE PURE, EXTRA-CLEANED
JOHNSON GRASS SEED

WHICH YIELDS FROM

Three to Six Cuttings Each Year,

WITH PRODUCT OF

Four to Eight Tons per Acre,

making the Best of Hay and Grazing in the World, can be had of the undersigned. Send for descriptive pamphlet to

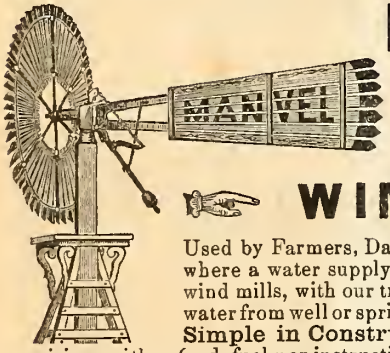
HERBERT POST,
Aug—3t. Postburg, Dallas County, Alabama.

PUBLIC SALE of **SHORTHORN CATTLE, SOUTHDOWN** and **OXFORDSHIREDOWN SHEEP.** I will sell at PUBLIC AUCTION my herd of Shorthorn Cattle and my flocks of Southdown and Oxfordshiredown Sheep on

27th August, 1884, at Weldon, Pulaski Co., Va.

Catalogue will be ready by the 12th.

WM. W. BENTLEY,
Pulaski Station, Pulaski Co., Va.



HARNESS THE WIND

BY USING THE

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WIND ENGINE.

Used by Farmers, Dairymen, Hotels, Private Residences, or any place where a water supply is required. Years of experience, a specialty of wind mills, with our trained mechanics, enables us to contract to deliver water from well or spring to any desired point. **Automatic in Action, Simple in Construction, Noiseless in its Work.** A servant requiring neither food, fuel nor instructions. **Will it Pay?** Do you want water delivered at the house through milk tank to the stock. Write, giving nature of work you want done, to **B. S. WILLIAMS & CO., Kalamazoo, Mich.**

C. F. MYERS, Fisherville, Augusta Co., Va. Aug—6t.

NORFOLK COLLEGE FOR YOUNG LADIES

OFFERS MORE ADVANTAGES

THAN ANY OTHER COLLEGE FOR YOUNG LADIES IN THE SOUTH.

New, Elegant brick buildings; thorough ventilation; abundance of light; gas; good water. Bath-rooms, with hot and cold water. Well heated by steam radiators; rooms well furnished.

Every possible convenience and comfort provided for boarders. Best modern educational appliances; full Collegiate course of study. Course in English, in addition to the usual preparatory studies, includes Anglo-Saxon, Philology, and Historical Grammar, as well as Literature and Criticism, and in its methods of teaching is the work of an experienced specialist.

Special provision for the best instruction in Calisthenics, Elocution, Natural Sciences, Music (Instrumental and Vocal), Drawing and Painting, Ancient and Modern Languages Conversation in French and German daily. Under Protestant influence, but undenominational. The different denominations represented in the Faculty and Directory. Charges very low when superior advantages are considered.

Aug—2t For Catalogue, with full information, address **R. H. WYNNE Secretary.**

FARMERS, USE

ORCHILLA GUANO!

The BEST and CHEAPEST for ALL CROPS.

That ORCHILLA GUANO positively and permanently *enriches the land;* that it *increases the crop and improves the quality of the land;* and that it never fails to ensure a
ts which 10,000 farmers, who are
nia and Pennsylvania are willing

J. W. FERGUSS

ribbean Sea, and comes to us di-
een out the lumps and bag it.
nt. Bone Phosphate Lime.
most valuable of all fertilizing
nerit in the small percentage of
shown by an exhaustive analy-
, a number of other valuable
Sodium, Chloride Potassium,
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BOOK AND JOB

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nd, that we may be sure that
is is verified by another anal-
have always been confirmed
sequently.

ENGRAV

Dabney, of North Carolina;
and Wilson, of Baltimore,

left off the cost of manu-

E'S own provision for her

Corner of Main and Fourte

converts the cheap and
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RICHMOND, V

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and permanently im-

Ellen,

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ıry St., Richmond, Va.

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JOHNSON GRASS.
(*Sorghum Halapense.*)

THE PURE, EXTRA-CLEANED
JOHNSON GRASS SEED

WHICH YIELDS FROM

Three to Six Cuttings Each Year,

WITH PRODUCT OF

Four to Eight Tons per Acre,

making the Best of Hay and Grazing in the World, can be had of the undersigned. Send for descriptive pamphlet to

HERBERT POST.

Aug—3t.

PUBLIC SALE of SHORTH OXFORDSHIREDOWN my herd of Shorthorn Cattle and Sheep on D, VIRGINIA.

27th August, 1884, Building, No. 1014 Main St.

Catalogue will be ready by the 1[illegible]

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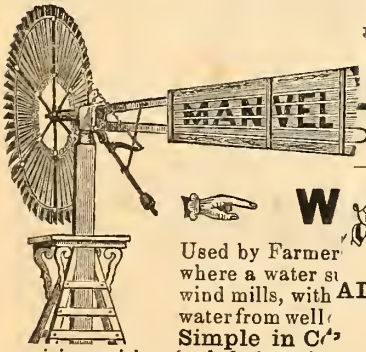
JOHN ENDERS. EDWARD COHEN.
ISHIP. GEO. K. CRUTCHFIELD. T. WM. PEMBERTON.
MOSES MILLHISER.



ORATED IN 1865.

Water Insurance Co.

Used by Farmer
where a water s
wind mills, with
water from well
Simple in C
requiring neither food, fuel nor
ered at the house through milk
want done, to
C. F. MYERS, Fisherville,

AIN STREET, RICHMOND, VA.

\- - - - - $200,000.

ize, and other property against loss or damage by fire

sident; THOS. W. MCCANCE, Vice-President. WM. H. HAXALL, James
Floh.

BAZIL GORDON, JR., Ass't Sec. JNO. B. GRANT, Solicitor.

ities, Towns, and Villages of Virginia seply

NORFOLK COL

OFFER
THAN ANY OTHER C

New, Elegant brick buildin
water. Bath-rooms, with ho
well furnished.

Every possible convenience
tional appliances; full Colleg
usual preparatory studies, in
as well as Literature and Criti
perienced specialist.

Special provision for the best
mental and Vocal), Drawing and P
German daily. Under Protestant
sented in the Faculty and Director

Aug—2t For Catalogue,

Assurance Society

OF VIRGINIA.

(INCORPORATED 1794)

ERPETUAL OR ANNUAL POLICY.

of Tenth and Bank Streets.

ERBERT A. CLAIBORNE, Principal Agent.

T. BOLLING, JR., ASSISTANT SECRETARY.

JOHN BLAIR, COLLECTOR. oct 1y

FARMERS, USE

ORCHILLA GUANO!

The BEST and CHEAPEST for ALL CROPS.

That ORCHILLA GUANO positively and permanently *enriches the land;* that it *increases the crop and improves the quality of the land;* and that it never fails to ensure a *luxuriant growth of grass* for succeeding years, are *facts* which 10,000 farmers, who are using it in the States of Maryland, Virginia, West Virginia and Pennsylvania are willing to testify.

This guano is found on the Orchilla Island, in the Carribbean Sea, and comes to us direct by vessels, and all we do to it on arrival is to screen out the lumps and bag it.

We guarantee Orchilla to contain from 35 to 45 per cent. Bone Phosphate Lime.

And not only does it furnish, in high percentage, this most valuable of all fertilizing elements, but (unlike *acid* Phosphate, which has its sole merit in the small percentage of phosphoric acid which it contains), *Orchilla* furnishes, as shown by an exhaustive analysis by Prof. J. W. Mallett, of the University of Virginia, a number of other valuable fertilizing *substances*, comprising Magnesia, Chloride Sodium, Chloride Potassium, Sesqui Oxide Iron, Carbonate Lime, Sulphate Lime, and others, making up the entire one hundred parts; giving the farmer 2,000 *pounds of actual fertilizer in every ton he buys;* and in a combination, formed in nature's laboratory, that cannot be attained by any manipulation.

THE CHEMISTS ENDORSE IT.

Every cargo of Orchilla is analyzed before leaving the Island, that we may be sure that none is brought away below our guarantee; and this analysis is verified by another analysis after the arrival of the vessel in port. These analyses have always been confirmed by the State Chemists, and others who have analyzed it subsequently.

We refer to Doctors Gascoyne and Taylor, of Virginia; Dabney, of North Carolina; White, of Georgia, and Leibig, Lehman, Williams, Toney and Wilson, of Baltimore, who have all made separate analyses of Orchilla.

ORCHILLA IS LOW-PRICED—because we have left off the cost of manufacture.

ORCHILLA IS SUCCESSFUL—because it is NATURE'S own provision for her exhausted fields.

And by its **wonderful clover-producing qualities**, it converts the cheap and barren high lands, like those of Eastern and Southern Virginia, into soil as fruitful as the Valley of the Shenandoah. All who have ever used Orchilla say, that *as a grass grower it has no equal.*

ORCHILLA FOR WHEAT.

For years the farmers of Maryland and Virginia have been testing Orchilla for wheat, side by side with the high-priced ammoniated goods, and the constantly-increasing *demand for Orchilla* shows how well it has stood the test. Not only has it made as much wheat (for less money), but it has left the *land covered with grass and permanently improved.* Give it a trial. Respectfully,

R. A. Wooldridge & Co., Importers

— BALTIMORE, MD. —

TRAVERS, SNEAD & CO., Importers' Agent, 1326 Cary St., Richmond, Va.

We sell Orchilla at a *low price.* Send for our LITTLE BOOK, giving testimonials of farmers who have used it for years. nov 1y

LATEST IMPROVED PATENT

AMERICAN CIDER MILL

With Double Crank, Adjustable Rollers, Feed Regulator and Center Drainers. Made in Three Sizes.

THE OLD DOMINION CIDER MILL,

OUR OWN MANUFACTURE.

Our Mills have never been beaten in a fair trial. They will produce more cider from a given amount of apples than any other Mill in use.

THE RANDALL HARROW, THE THOMAS HARROW, THE ACME HARROW, THE BERRY HARROW.

All of the above celebrated Harrows are handled by us for this market. Also

The OLIVER CHILLED PLOWS

The Best Plow in the Market.

H. M. SMITH & CO., Richmond, Va.

A reputation which endures and increases with the progress of time, and after the lapse of years, is more widely and fimly established than ever before, can only be founded upon superior merit. This is briefly the history of the—

AMERICAN

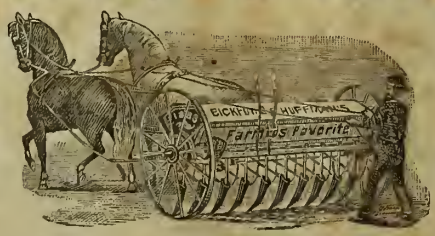
FRUIT EVAPORATOR

of which we have the General Agency for Virginia and North Carolina. Our patrons will confer a favor if they will furnish us the address of acquaintances and fruit-growers who could use an Evaporator profitably, and we will send them circulars and price-lists. Our catalogue for 1884, of 208 pages, will be sent on application.

THE FARMER'S FAVORITE.

BICKFORD AND HUFFMAN

GRAIN AND GUANO DRILL.



Sows perfectly,

Corn, Peas,

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Money and time are saved by the use of a good Drill. It wastes no fertilizer, but puts it with the grain. It puts the grain regular and covers it nicely. Grain put in with a Drill is protected from the winter freezes. This Drill can be set to sow any given quantity to the acre. Send your order in early to us, and get the best.

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